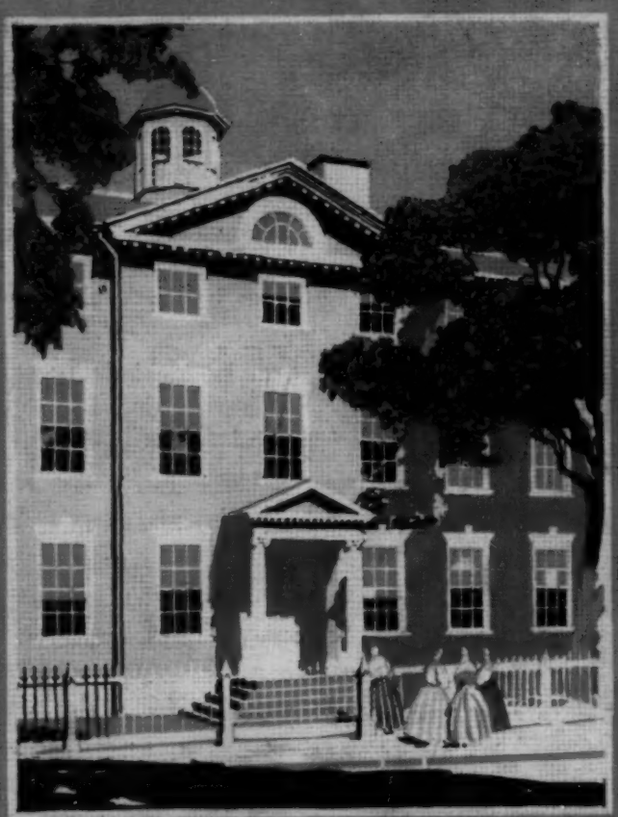
THE ARCHITECTURAL FORUM



APRIL 1925

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The
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House of J. H. Carstairs, Esq., Ardmore, Pa.

OFFICE OF JOHN RUSSELL POPE, ARCHITECT

ONE of the most interesting country houses completed in recent years is the residence built at Ardmore, Pa., designed by that talented artist and architect Otto R. Eggers. Few houses possess greater charm and distinction than does this dignified house of Mr. Carstairs, which so well suits its fine location and historical environment. The style chosen for this design is what is commonly known as "Pennsylvania Colonial," a local phase of this style, which was characteristic of the suburbs of Philadelphia throughout the latter half of the eighteenth century. The rough stone laid up in cement, with irregular pointing, reminds one of that of many of the late Colonial mansions still to be found scattered over the countryside in the outskirts of Philadelphia and Germantown.

Characteristic of this style, wood painted white has been used for the architectural details of the building, such as entrance door, window frames, cornices and dormer windows. The stone, which varies somewhat in color, is largely of a warm cream with a slight tendency toward pink. Cement has been "buttered" upon the wall surfaces in a very rough and uneven manner, producing a pleasing texture and harmonizing well with the color of the stone which in many cases is seen through the cement, giving an old fashioned effect.

The formal entrance with stone piers and wrought iron gates, in late Colonial style, leads into a forecourt in front of the house. This court is flanked on one side by the long service wing of the house, still farther extended by a high wall, and on the other side by another long stone wall concealing the terraced flower garden. At the end of this wall, nearest the house, a small arched gateway gives access to this garden. The forecourt itself is encircled by the entrance drive, forming a center plot beautifully planted with flowers and shrubs and large box trees. The feature of this forecourt garden is the oblong pool, extending nearly its length. Against the group of large box trees centered at the end of the pool is a white marble figure of Aphrodite. The shrubbery and flowers of this garden give a touch of informality, and the trees and shrubs along both sides produce an atmosphere of age and distinction in this approach to the house such as is seldom found.

The design of the building itself shows a dominating center motif of two high stories and roof with dormers, which rises sufficiently above the balancing wings to give it proper prominence. The ends of this center motif are built up with stone gables and massive chimneys which sharply define this portion of the design. These stone gable ends receive on either side the lower roofs of the wings of the house. The cornice line of these wings is lower than that of the main part of the house, while the roof and cornice line of the long service wing are placed upon a still lower level. This differentiation in roof and cornice lines adds much to the relative scale of the entire design. The entrance front with its five windows and center door shows a pleasing preponderance of wall surfaces in relation to fenestration. This carefully studied relationship increases the dignity and apparent size of the entrance front and makes possible the use of an imposing projecting entrance door with hooded roof, which type of roof is repeated on the several bay windows on the other sides of the house. This roof treatment of the bay windows not only adds to their apparent height but also gives to them a charming quaintness and originality. The garden facade of the house, which faces on a broad stretching lawn broken by tall elms, shows an interesting use of arched openings with casement doors which contrast pleasantly with the high roofed bay windows. It is encouraging to find that the bay window can be so successfully used as a feature of late Colonial design. Precedent in this country shows few examples of the successful use of the bay window in Colonial houses, but many splendid examples are found in Georgian houses in England. The color treatment of the metal roofs of the bay windows in the Carstairs house still further adds to their attractiveness. Painted in broad stripes of vivid and contrasting colors, the effect produced is that of gay awnings. The dark green in the alternating stripes of these window hoods is repeated in the color of the window shutters and the various awnings. It is seldom that so much feeling of individuality and originality is found in the design of a modern Colonial house.

Pool, Entrance Forecourt

Round-headed dormers, which occur on both elevations of the center part of the design, are small in size and simple in detail, so that they add to rather than detract from the architectural quality of the design. In fact the smallness of their size gives scale to the main roofs of the house.

As may be seen from the illustration on page 215, the walled and terraced garden is delightfully and successfully made a part of the whole design. Some of the doors of the sun parlor open directly upon this garden, in which box and flowering shrubs have been happily combined with the rough masonry of the garden wall and terrace steps. Surrounded by beds of roses and by stepping stones in formal layout, a small pool with hexagonal ends is the center feature of this garden. At one end a high, vine-covered pergola gives protection and seclusion, while the side opposite the terrace and high wall is so screened by tall shrubbery that the garden has great privacy. Simple fountains, which break the severity of the garden wall and terrace parapet, are successful in their appropriateness and character.

The plan shows a balanced arrangement, with a large living room 36 feet long by 20 feet wide occupying the greater part of the main floor. In plan this room is symmetrical, the center fireplace balanced by double doors on the inner wall of the room, while two large bay windows balance an entrance door on the opposite side of the room. These windows and doors open onto the broad lawn at the rear of the house. At either end of this living room are double doors, leading at one end to the dining room and at the other to the large sun parlor. The entrance part of the main floor plan shows a spacious hall, at one end of which a circular staircase leads to the floor above. At this end of the hall, under the staircase, double doors lead to the dining room, while at the other end a passage leads to the sun parlor. Off this passageway open coat rooms and lavatories for both men and women. The plan of the service wing on the main floor includes a convenient and practical

Entrance Gate and Forecourt

arrangement of pantry, kitchen, servants' dining room, laundry, cold room, storage closets and service stairway. The angle at which this service wing joins the main house is such that an unobstructed view of the surrounding lawns is to be had from two sides of the dining room. The plan of the second floor provides a master's suite at the end above the sun parlor, consisting of a large bedroom, spacious sleeping porch, dressing room and bath. Another master bedroom with boudoir and large closets is located over the living room. Two other bedrooms and baths complete the plan of the main part of the second floor. A side hall leads down five steps to the level of the second floor of the service wing, where are located five servants' bedrooms, a bath, linen closet and trunk room. Only the center portion of the house is sufficiently high to permit rooms on the third floor. Here are located one large bedroom, dressing room and bath, a linen room, and a sewing room. Due to the slope of the roof, the outer walls of these rooms are set well in, so that practically no slope of roof appears above the outer walls of these rooms. This wall treatment necessitates a deep recess for each of the dormer windows.

No analysis of this unusually individual house would be complete without some description of the delightful interiors. The large living room is paneled from floor to ceiling, with a richly carved cornice and built-in bookcases to give decorative distinction to the room. These bookcases, which are set

Terrace and Pool in the Garden

in arched recesses, have cupboards below and broken pediments above, truly late Colonial in feeling. The marble mantelpiece, Adam in style, in which white and colored marbles are combined, contrasts pleasantly with the gray-green of the painted walls. Hangings, furniture coverings and rugs in rich tones of old gold and rose harmonize pleasantly with the green walls. The dining room, more strictly Georgian in design, is also paneled, showing rich carving in the cornice, mantelpiece, overmantel and arched niches. English furniture of the Adam and Sheraton

House from the Garden

SUN PARLOR

SUN PARLOR, SHOWING ARRANGEMENT OF WINDOWS

HOUSE OF J. H. CARSTAIRS, ESQ., ARDMORE, PA.

JOHN RUSSELL POPE, ARCHITECT

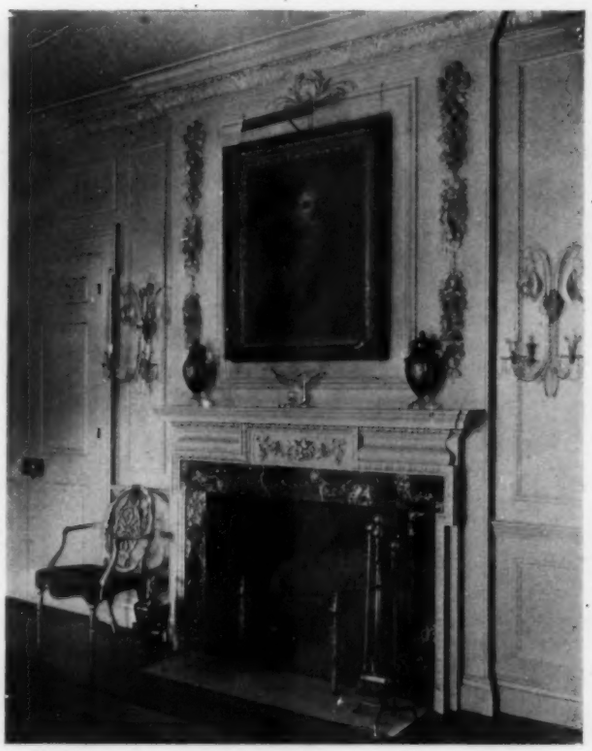
LIVING ROOM

DINING ROOM

HOUSE OF J. H. CARSTAIRS, ESQ., ARDMORE, PA.

JOHN RUSSELL POPE, ARCHITECT

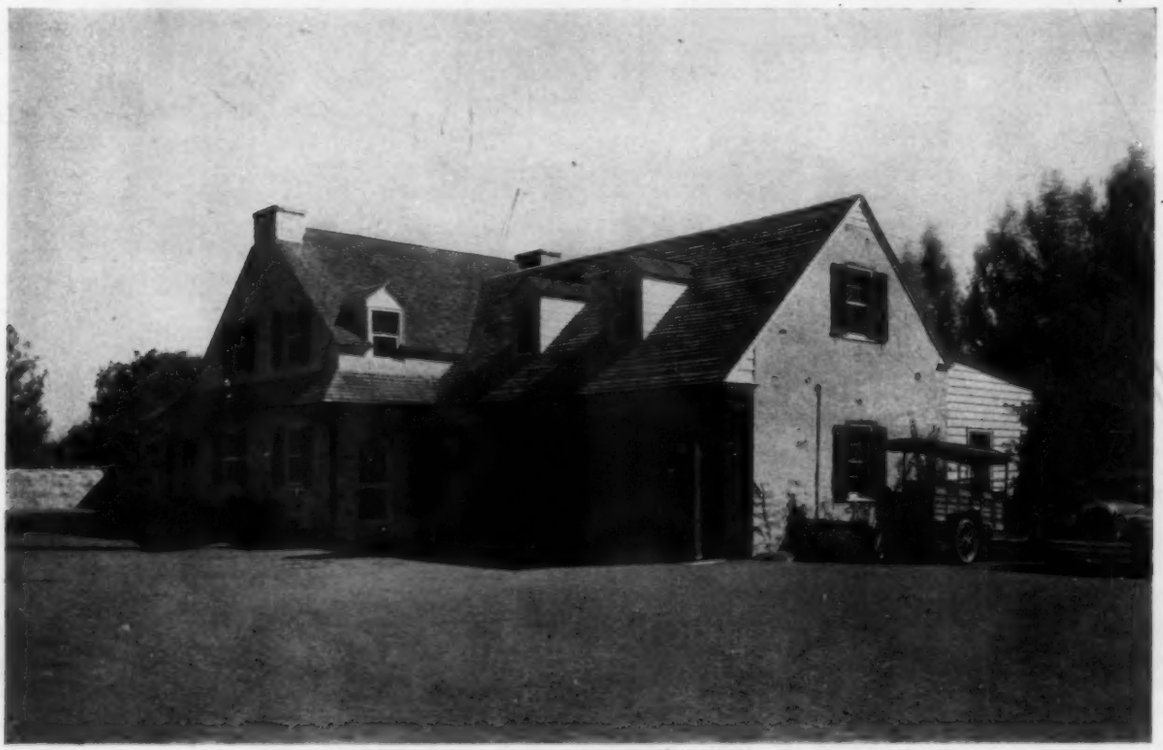
styles further accentuates the stylistic qualities of this room. Graceful sconces create notes of interest against the paneled walls of this dining room, in which colonial buff and blue represent the color scheme. The sun parlor indeed deserves its name, which is seldom the case. This room is truly a parlor flooded with sunlight, through its many high casement windows. A beautiful floor in gray and yellow marble, arranged in squares and ovals, gives dignity to this room. Gay flowered chintz hangings at the windows are in pleasing contrast with the warm gray of the walls and pilasters. An ornamental mantelpiece in white and colored marble is the chief feature of this room, in which a large arched mirror and fountain add other notes of interest. The electric wall brackets as well as the center chandelier are appropriate and informal in their metal flower decorations. These three attractive rooms all open into the unusually fine entrance hall. Here



Detail, Dining Room

black and white marble floors, and plain plaster walls, ornamented above the doors with medallions in low relief suggesting the Adam style, give a formal dignity suitable to the public entrance of a large house. At the dining room end of this entrance hall a curving stairway of exquisite grace of line and delicacy of treatment leads to the floor above. The slender balusters of the wrought iron handrail, which follows both sides of the stairway, still further accentuate the feeling of grace and refinement in this beautiful staircase.

Plates 48, 49 and 50 in this issue of THE ARCHITECTURAL FORUM show the plans and additional illustrations of this interesting house, from which it will be seen that it stands as an unusually successful solution of the problem of designing a country home which shall embody the traditions, social as well as architectural, of a locality rich beyond most communities in traditions of both kinds.



Garage and Chauffeur's Quarters

An Architect's Impressions of Oxford

By HAROLD FIELD KELLOGG

YEARS ago I "did" Oxford with a guide in five hours and saw all the score or more colleges, but I remember only Brasenose because of its brass knocker,—a lion's head with its enormous nose. For an architect, the best way to "see" anything is to draw it; if he has examined its proportions and details closely enough to make even the roughest sketch, it must remain in his mind.

The charm of Oxford comes not so much from its crumbling antiquity, its historic significance, or its architectural monuments as from a sense of its fine, livable qualities, its restrained scholastic feeling and its subtlety of scale. The scale of the work is so perfect that one wonders how it was achieved, and it is this elusive element which is so difficult to grasp. We are afraid of making a design too small in scale, for fear it will appear cramped, but Oxford is not cramped,—it is just snug.

Arriving there again and alone, late one night a few months ago, I might have been lonely and depressed, but what a feeling of comfort and of well ordered existence came over me when I strolled into the first "quad,"—Exeter, I think! It was raining, but the dim buildings above the wet flagstone pavements and neatly cropped "green" gave a familiar feeling, as if I had lived there in some previous existence. What mystery lurked in the dark entrance gateway with its iron-studded oak doors, doors which were reminiscent of knights in clanking armor. Above was the vault, beyond a dim lantern, and a warm yellow glow came from the window of the porter's lodge. I felt a desire to find my way into the nearest doorway, mount the worn stone stairs, and spend the rest of my life there! Back in the misty street, I wandered down the "Turn," pushed back another partly open door and found myself in Lincoln quad—similar, and yet subtly different.

It is quite impossible to describe in detail each college separately, for about each are things which attract the eye and hold the attention,—it may be a little gem of a corner, a tower or some exquisite window. Many of Oxford's choice bits are hidden in out of the way places; there are the old ramparts, for example, behind New College,—a wall which history tells us was built during the reign of Henry III and was old before New College was founded in 1379. Another choice bit is the little archway at Merton College between the large quad and the picturesque "Mob quad," the origin of which name has apparently been lost with time. The exquisitely proportioned towers of Magdalen are best seen from across the river with Folly Bridge in the foreground and with the lights of the town reflected on the still, black waters of the Cherwell. I rambled back to the hotel by way of Long Wall, Holywell and the Broad, past St. Mary Magdalen's and the Martyrs' Monument. In Oxford, one does not speak of Long Wall Street, Holywell Street or Broad Street, but always familiarly as Long Wall, Holywell and the Broad,—the familiarity of long usage.

Oxford is not merely a town of colleges; it has its own quaintly picturesque houses. A view down Fisher Row with the remains of Oxford Castle towering above the canal might almost be a view in Bruges or Ghent, the houses toppling together like fishwives gossiping. Worcester College, called "Botany Bay" from its remoteness from the town, is really not far away; all the colleges rub elbows with one another. The choicest bit here is the group of cottages behind;—here the architect wonders how such simple materials can be so wondrously combined,—carved wood gable ends, stone mullioned windows, saddle-backed ridges and rickety dormers.

Back by the Cattle Market and Friars' Entry, I came upon the church of St. Mary Magdalen, a typical parish church showing all the styles from Norman to Perpendicular. Here the University sermons are preached by "select preachers," each sermon preceded by the "bidding prayer" for the University's benefactors. Nearby, in front of Balliol College, stands Martyrs' Memorial, a quaint Gothic pinnacle. Here Latimer and Ridley were burned in 1555. Their only relief from pain was found in the bags of gunpowder hung around their necks, which quickly put an end to their sufferings. Balliol, founded in 1260 in performance of a penance imposed upon John de Balliol by the Bishop of Durham, is largely restored. Those were great old days, when a man could expiate some crime by endowing a college or a church,—but have times really changed so much after all?

Back of Balliol is Trinity, one of the finest of all the colleges in Oxford. I pushed into its creeper-covered chapel, and when my eyes became accustomed to the dim light, I found a masterpiece of wood carving by Grinling Gibbon, a cedar screen and altar piece. Gibbon seems to have carved more wood at Oxford than in all the rest of England put together. What a strange, incongruous pile is the Radcliff Camera! The Renaissance dome, graceful as it is, seems to speak of a different epoch, of the advent of modernism into a mediæval university town,—distinctly another note. All Souls', across the way, brings us back to the ecclesiastical style, although showing a touch of the classic in its orders. All Souls', Christ Church, Corpus Christi, the Examination School, the Bodleian Library,—one can but mention their names.

One day while sketching in an inner court at Jesus College,—a court not more than 30 feet wide,—I met the college architect and asked if I might look

Corner of Quadrangle, Christ Church, Oxford

Tom Gate, Christ Church, Oxford

From Pencil Sketches by Harold Field Kellogg

over his plans for his new work and for some of his restorations. Together we went, first down the narrow lane called Ship Street, then through a passage under the houses fronting on the street, and finally up a dim flight of stairs to his office at the top. Here he had designed one of the finest of the modern buildings, doing all the drafting with his own hands. By studying the old work he had been able to give to the new not only the style and scale of the old but much of its wondrous charm as well. What modern American office of a hundred draftsmen, located in a city skyscraper and with even the best library and documents at its disposal, could give that elusive air of fitness and continuity with the past? He had absorbed it by living for years in its atmosphere! When I expressed a desire to get plans of all the colleges, he dropped his work, led me to an old bookshop, up into its dusty half-timbered loft, and there found some fine old prints made many years ago. We spent half a day together, and wandered leisurely from college to college, while he pointed out the many interesting spots he had found. He was not too busy to entertain me,—his work could wait! That was a most profitable day for me, for I saw many picturesque corners I might not have found alone. The severe dignity of the cloisters of New College, one of the finest examples of ecclesiastical work in England, charmed me in their way, as much as the "Tom Tower" at Christ Church, which was designed by Sir Christopher Wren in 1682 for Bishop John Fell.

There is one thing noticeable in all the colleges; they are more personal and intimate within than without. The quads are really interiors, open to the air. There is a change of feeling in the architecture as one passes under the entrance gates. The interiors of the great rooms, the chapels, libraries and dining halls, give one an impression hard to describe. Perhaps it is the result of the dim light filtering through the stained glass, glowing with color, some as old as the University itself, and other windows designed by Sir Joshua Reynolds. Perhaps it is the wood carving; perhaps it is the lace-like stone tracery,—and perhaps it is the influence of all combined. Oxford's air of living well does not pass lightly over the dining halls, making them merely rooms to eat in. All of these halls, with their heavy timbered roofs, high carved paneling, old paintings and massive oak furniture, are expressive of the solid rather than of the gay, social side of the student life. Around these crude tables, seated on long benches, Britain's manhood has been developed through the centuries by plenty of good cheer and good beef. Napoleon said, after the battle of Waterloo, that the day was won not by superior strategy or military tactics, but by British beef!

CORPUS CHRISTI, OXFORD

FROM PENCIL SKETCH BY
HAROLD FIELD KELLOGG

ENTRANCE, BALLIOL, OXFORD

FROM PENCIL SKETCH BY
HAROLD FIELD KELLOGG

DETAIL, CHRIST CHURCH, OXFORD

FROM PENCIL SKETCH BY
HAROLD FIELD KELLOGG

THE ARCHITECTURAL FORUM
APRIL, 1935

PLATE 43

MERTON TOWER, OXFORD

FROM PENCIL SKETCH BY
HAROLD FIELD KELLOGG

The Flatbush Presbyterian Church

HOBART B. UPJOHN, Architect

THE architect who designs a church for a site which is urban or semi-urban, must plan for present-day conditions and at the same time have an eye to conditions which may obtain within a comparatively short time. Nothing could be more charming or appropriate for a country church nestling among the trees of its churchyard than a low, rambling grouping, with a spire pointing to the sky; but elsewhere other conditions must be reckoned with, and the grouping and spire which were so graceful and appropriate in the country would be wholly out of place when presently dwarfed and overshadowed by a tall apartment house, built perhaps by investors quick to appreciate the advantages in the way of receiving air and light which a location next to a church presents.

Possibly these conditions were in the mind of the designer of this church located in a rapidly growing part of suburban Brooklyn, where already apartment houses of various heights are springing up. Gothic forms were desired by the congregation, but use has been made of a type of Gothic of vigorous character, and of a plan closely grouped and calculated to hold its own whatever may be the development of the neighborhood. The size of the plot, which is upon a corner, and the L-shaped form which the area of the building has been given, made possible a graceful and effective arrangement by which a large part of the plot is used as a lawn, affording the slight aloofness of setting which the character of the buildings demands.

The importance of the part of the group devoted to various forms of social service demanded that the entrance thereto be prominent and important, and the area of the buildings prevented there being two important entrances, one leading to the social service and administration portion, and the other to the nave or church proper. The plan therefore shows but one entrance, which serves both portions of the group, this arrangement making possible an effective architectural treatment, the one entrance being placed beneath the square tower at the angle where the two portions of the group are joined. The east end of the nave, which thus faces the street and is not joined to other parts of the building, is given an octagonal apse, lighted by the three tall traceried Gothic windows which add greatly to the architectural dignity of the group. The exterior of the church has been developed in stone of a rich brownish gray, showing considerable iron. The stone is laid in random ashlar, of a rough finish, while the trimmings are of stone in a smooth finish. The roofs are covered with slate. Everything about the building is honestly and thoroughly built. There is no sham about it, no painting and "sanding" of wooden trim to make it vaguely resemble stone.

The same excellent use of material characterizes the interior. Considerable use has been made of plaster of varying textures appropriate for different parts of the building. The plaster in the nave, where there are several large, unbroken wall surfaces, is of bold, rugged character tinted a rich cream color and applied to the stone of the structural walls. The piers and pointed arches which carry the clere-story and divide the nave from the two narrow aisles are built of the stone used for

The Flatbush Presbyterian Church, Brooklyn

FLATBUSH PRESBYTERIAN CHURCH, BROOKLYN, N.Y.

HOBART UPJOHN ARCHITECT

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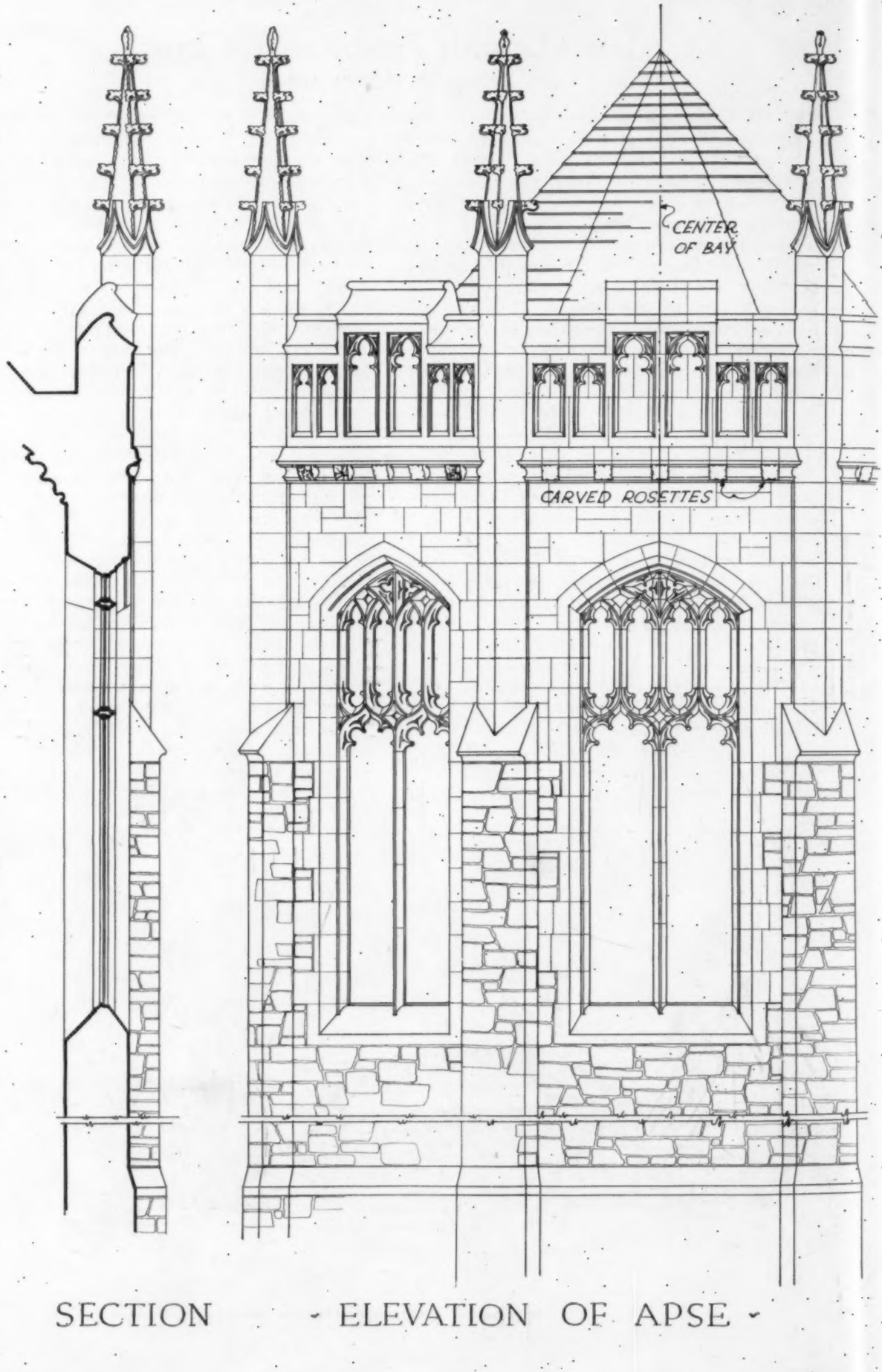

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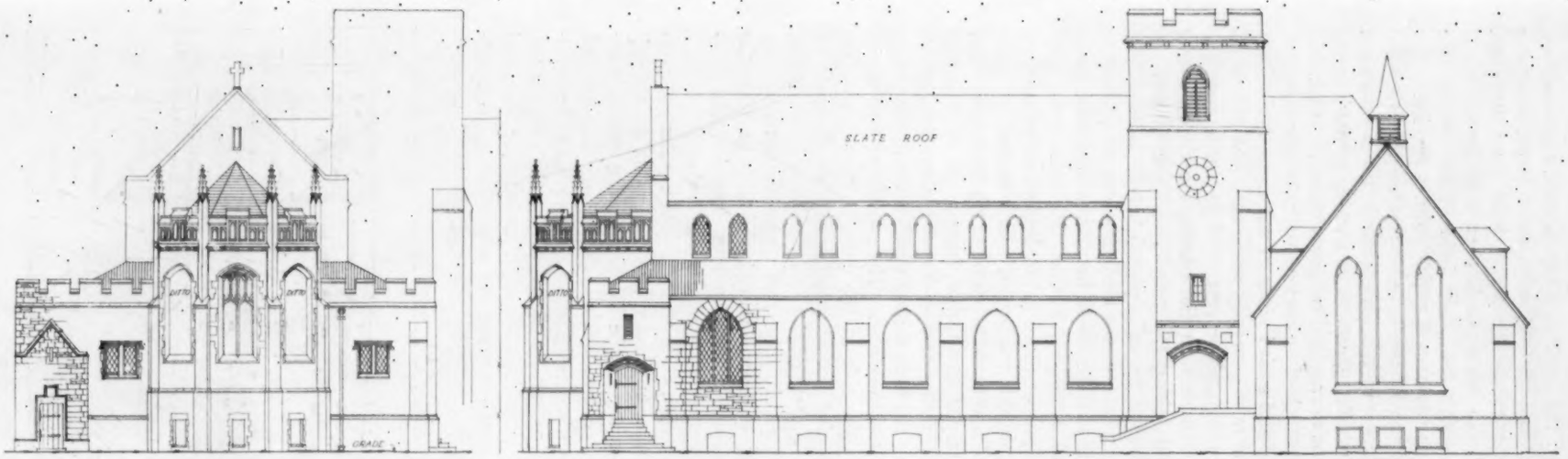


· FOSTER AVE. ·

· E. 23RD STREET ELEVATION ·

· CROSS SECTION ·

· LONGITUDINAL SECTION ·

FLATBUSH PRESBYTERIAN CHURCH, BROOKLYN, N.Y.

SCALE IN FEET. 0 10 20 30 40 50

HOBART UPJOHN ARCHITECT.

the exterior. The simple corbels from which spring the principal roof timbers are of stone, and the exposed roof itself is of wood, simply treated. The rest of the interior woodwork, the carved wainscot within the apse, the communion table, lectern and pulpit, and the plain wood benches which are used instead of pews, all have a simple finish. Floors are laid of gray cement; and the lighting fixtures are of iron of a rather severe design making use of lights in candle forms.

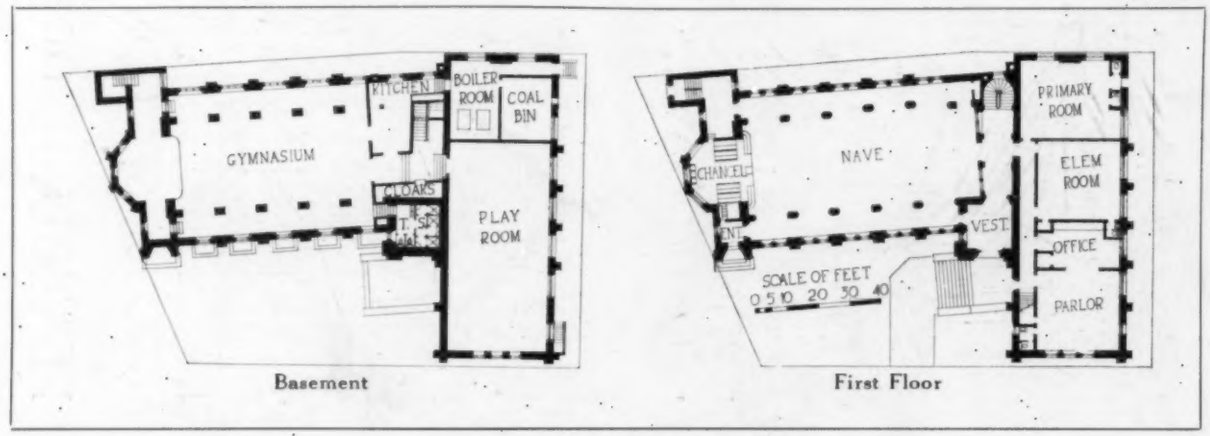
But the plan of the church is perhaps of even greater interest than either its design or the excellent use of materials which has been made. As has already been suggested, the work of the church includes social service of many kinds in the neighborhood, and the buildings have been planned with this in mind. The main entrance, beneath the tower, opens into a vestibule, paved with stone, which leads directly into the nave at the left, while the hall, which is just ahead, also gives access to the nave and at the right to the administration rooms of the church, the study and offices of the pastor and his secretaries, and several spacious and well lighted guild rooms which are used for meetings of clubs and societies of different kinds connected with the church.

The space above the hall or corridor which is entered from the vestibule, dividing the nave of the church from the social service portion, is utilized as a gallery which when needed will add considerably to the seating capacity of the nave.

This entrance hall already mentioned opens onto a stairway leading to the basement and the upper floor. This upper floor contains a large assembly hall, open to the lofty, high pitched roof, as this room occupies space which was once the upper part of what was the nave of the original church. Like the guild rooms just below, this spacious assembly room is well lighted, since the buildings are set sufficiently far within the property lines of the plot to insure there being unobstructed light on all sides. The basements of the buildings, excepting such parts as are required for boiler room and places for the storage of fuel, are devoted to work among the boys and men of the locality. They include a gymnasium, with toilets and shower baths, and a large club room where the men of the parish hold their meetings. This floor also contains a kitchen used for the social meetings which are often held in the gymnasium and the club rooms and which require service.

The interior of the nave of this church is typical of a tendency in the arrangement of ecclesiastical interiors, which appears to be gaining ground among many of the evangelical religious bodies. Instead of using as the chief ornament of the sanctuary the tall colored and gilded pipes of an organ, more liturgical use is now generally made of a chancel, semicircular, hexagonal or octagonal in form, with the communion table near the center, the clergy sitting beyond and facing the people, and the singers sitting on benches or stalls placed "choir fashion," all suggesting what was the custom in the early Church, and what is still the use in many of the Roman basilicas. Well arranged, but at the same time kept within its proper place as an important adjunct of public worship, is the organ, which instead of being emphasized and made much of as the most important architectural or decorative feature, is here placed within its chamber at one side of the chancel, its tall pipes filling the arch through which the organ chamber opens into the choir. The console here is placed at the opposite side of the chancel, thus giving the organist a far better opportunity of judging or gauging the effect of the organ's share in the music than could possibly be had were his seat and the manual or keyboard placed directly beneath the organ pipes where the volume of sound would frustrate any attempt to judge of its value.

Probably with a view to encouraging the presentation of memorials, and at the same time to prevent the grave injury to the interior of the church were thoughtless or indiscriminate giving encouraged, Mr. Upjohn has designed in keeping with the architecture and to agree with the rest of the furnishings, the pulpit, lectern, communion table, choir stalls and other accessories, many of which have been presented and are now in place within the sanctuary.



Basement First Floor

The Flatbush Presbyterian Church, Brooklyn
Hobart B. Upjohn, Architect

The Straus Building, Chicago

GRAHAM, ANDERSON, PROBST & WHITE, Architects
By LEO J. SHERIDAN AND W. C. CLARK

THE problems involved in the creation of a modern office building are numerous and difficult. Selection of the most appropriate site; choice of architect and general contractor; formulation of general and detail plans for an improvement that will mean the most effective utilization of the site; developing an efficient, flexible organization to collaborate with architects and contractors; supervision of construction to see that the owner's ideas as reflected in the plans and specifications are being carried out with fidelity and dispatch; inauguration of a renting and publicity campaign which will assure maximum occupancy by tenants of the desired kind as soon as possible after the completion of the building; the selection and training of a building organization which will assure efficient service to the tenants from the opening day; these are some of the major tasks which confront the owner-builder in the year or year and a half following the inception of his project. Rarely does the task of management call for such a combination of qualities, —the capacity for scientific analysis of a problem; the balanced judgment, which carefully weighs pros and cons and comes to the right conclusion; the imaginative foresight which visualizes future trends in city development and in economic values; the faculty of handling men so as to induce maximum effort and eliminate friction; the ability to build and maintain a flexible organization, capable of adjusting itself rapidly to ever-changing conditions, and the knowledge of psychology which will insure the successful formulation and execution of a campaign designed to create public interest in and develop good will for the new enterprise. Rarely, also, does the task of management call for the exercise of its functions under such pressure as to speed.

Fortunately or unfortunately, the operations involved are not repetitive. Most individuals build a modern office building only once in a lifetime. There is, therefore, no opportunity of learning from one's own mistakes. That is not true, of course, in the case of an investment house such as S. W. Straus & Co., which has for years specialized in the financing of large building projects of different types in all parts of the country. For this reason, and in the hope that it may be of some value to others who

Detail, Main Entrance, Straus Building, Chicago

Doorway in Main Banking Room

may be confronted with similar problems in the future, there is set down in this article something of its experience in solving the problems connected with the building of the new Straus Building on the corner of Michigan Avenue and Jackson Boulevard, often referred to as Chicago's finest office building, a magnificent structure in the heart of the city.

For some years S. W. Straus & Co. had been planning the construction of a modern office building in Chicago, which should not only provide an efficient home for its rapidly expanding activities, but at the same time constitute a fitting commemoration of the completion of its more than two score years of successful real estate operations in that city, an enduring symbol of its faith in the permanence of that business, and its contribution to the realization of the dream of "Chicago, the City Beautiful." In the course of a continuing investigation of the present advantages and future possibilities of various districts and sites in the downtown quarter of Chicago, the corner of Michigan Avenue and Jackson Boulevard had been selected as the most suitable location for the proposed improvement. This site, offering a key position in the famous Michigan Avenue skyline, overlooking Grant Park and the lake, and at the intersection of the city's two greatest thoroughfares, seemed to combine in maximum degree those qualities of accessibility and environment which assure commercial success and make possible imposing treatment. Negotiations looking toward a purchase of the site had been previously undertaken, but it was not until after the death of the late owner that the unwillingness of the executors of his estate to carry forward to completion his plans for its development made it possible for S. W. Straus & Co. to secure possession and begin the realization of its plans. It meant the final fulfillment of many hopes.

The unusual combination of circumstances surrounding the transaction secured favorable terms to the purchaser, and yet the site involved a commitment of several million dollars. Extreme haste, therefore, was necessary, if the period during which this huge investment would be unproductive was to be reduced to a minimum. At the time of purchase no plans had been drawn. It is true, of course, that the plans of the previous owner were well under way, and that part of the steel for his project had been rolled and fabricated. Incidentally, this steel contract was taken over with the property, which meant considerable saving, since the price of steel delivered at the building had increased $30 per ton since the time the original contract had been let, and only 1,000 tons of the 12,000 tons under contract had been actually fabricated. This part was sold; the rest was held subject to revision of plans and specifications. Aside from this, however, all the work of preparation and detailed planning had to be crowded into a very brief period, if, as was soon decided, the building was to be ready for occupancy on May 1, 1924, leaving only about 16 months for the extensive work of planning and construction.

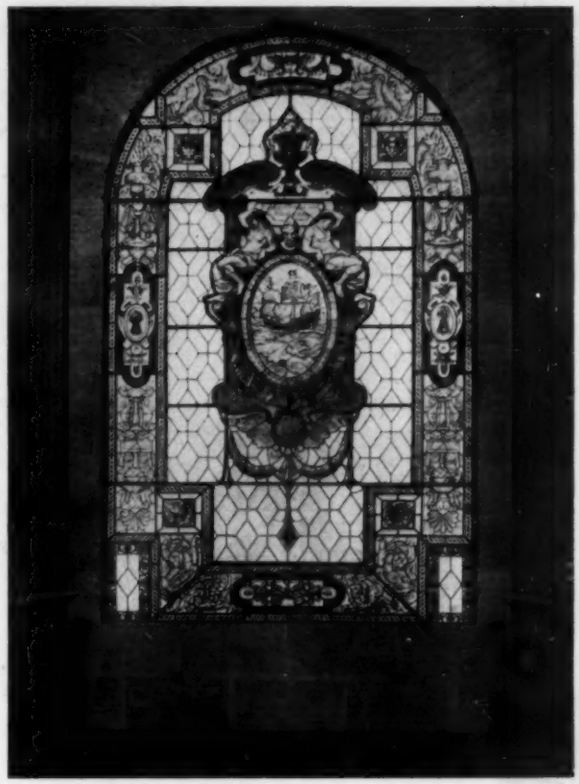
No time was lost, therefore, in beginning opera-

Office of One of the Vice-Presidents

tions. Immediately after the purchase of the site Graham, Anderson, Probst & White, a firm of national importance known not only for the impressiveness of the office buildings which they have designed, but also for the efficiency of their layout and equipment, were engaged as architects. This was followed up immediately with the selection of the Thompson-Starrett Company as general contractors. This firm had constructed such buildings as the Woolworth and the Equitable Buildings in New York, the Union Trust Company's building in Cleveland, and the Continental and Commercial National Bank Building in Chicago, and had established an enviable reputation for ability to handle such huge projects and deliver them on time under guarantee.

After engaging architects and general contractors, Meyer, Strong & Jones, of New York, well known in both East and West for their experience in office and bank building work, were retained as consulting engineers. They were assigned to collaborate with the architects on the development of the plans and specifications in connection with the heating, lighting, ventilating, elevators and general electrical work. Their work ended when the plans and specifications were accepted and the contracts let. As a further safeguard, an additional consulting engineer, Milton C. Hartman of Chicago, was retained to collaborate with the architects and the other consulting engineers and to follow through the construction of the building. Specifically, his task was to see that the actual construction was in accord with the plans and specifications and to assist the architects in ironing out any difficulties that might arise in the course of construction, with a view to hastening completion.

But despite this line-up of architectural and engineering talent, and despite the fact that S. W. Straus & Co., because of its extensive experience in financing large buildings in all the large cities of this country has in its files a vast fund of data on the planning and equipment of various types of buildings, the owners of the proposed structure decided to go one step further, so desirous were they of assuring the best possible plans for their project. Mindful of the importance of the point of view of the tenants who occupy the commercial building and also of those who actually operate it, they determined to draw upon the storehouse of hard-won practical wisdom of the most neglected man in the building industry,—the building manager, upon whose shoulders falls the burden of making the property a commercial success, all too frequently in spite of the mistakes of others. Early in April, 1923, therefore, they requested the National Association of Building Owners and Managers to call the first meeting of its kind ever held, a committee of the Building Planning Service, consisting of many of the best known building managers from all parts of the country, commissioned to go over the tentative set of plans prepared by the architects and engineers, and make such recommendations as in their opinion would increase operating efficiency. Suffice it to say that suggestions were made by this com-



Window in Rear Wall of Banking Room

Office of the Senior Vice-President

mittee which increased the rentable area and lowered the cost of construction, on the basis of the tentative plans prepared, by about $250,000. At the close of the conference the owners had the satisfaction of hearing from this group of men best qualified to speak from the points of view of both owner and tenant the announcement that the plans represented a development of the site as nearly perfect as it was humanly possible for it to be made.

Main Stairway to Banking Room

Meanwhile the organization which was to consist of the owners' own personnel and to function for them directly had been rapidly formed. At an early stage in the proceedings a coördinating and directing authority had been set up in the form of a building committee of five men, among whom the work involved in this great building operation was distributed. The work of this committee was split up into four major divisions,—Construction, Renting, Publicity, and Operating. Of these the first three, of course, were most active during the construction period. Further, between the three last named divisions the closest coördination was maintained. One member was in immediate charge of the construction division, working with an assistant superintendent, three accountants, and the requisite clerical staff. All of these men were on the payroll of the controlling interest, and their whole time was devoted to construction work. The accounting section rechecked all figures of the architects and contractors on all work done on the basis of unit prices, and kept a watch over all costs and expenditures. Throughout the whole period of construction, extreme vigilance was exercised to maintain a fully developed set of accounts and a correct record of all extras or credits as they developed. But perhaps more important was the coördination which the staff was able to give the architects and contractors by way of expediting construction. A large building operation resembles either a madhouse or a happy family. In a project of this kind it is absolutely vital to have not only an organization so manned that friction arising out of personal relations will be reduced to a minimum but also an organization so controlled and so flexible that all emergencies can be handled and decisions made without delay. The "happy family" relationship was characteristic of the construction process on the Straus Building; if it had not been, completion of the building in the record time contracted for would have been utterly impossible. Credit must be given to the personal representatives of the architects and general contractors who were assigned to the work of supervising and expediting construction, and to all the sub-contractors who had any part in the undertaking, as well as to the members of the building committee itself for the results.

One serious mistake which the owner who is erecting an office building for the first time is very likely to make is too great a delay in the appointment of his building management staff. The pressure of the immediate work of constructing the physical plant for his enterprise is so great that he is likely to forget all about the equally important task of making adequate preparations for setting the enterprise upon its feet as a "going concern" as soon as possible after the construction of the plant. For let it not be forgotten that the operation of a modern office building is a great business enterprise. A large project like the Straus Building, for instance, is a great business concern, having on its payroll from one to 300 employes, selling a difficult and many-sided service to four or five thousand established customers (the tenants who occupy it) and a less varied service to twenty or thirty thousand additional customers (those who daily visit the building and its tenants), and bringing in an annual gross income counted in millions of dollars. It has already been indicated how important it is not to allow a valuable site to stand idle, and it is much more important not to let that site plus a more expensive building remain wholly or largely unproductive, even for a day. But if such loss is to be prevented, the owner-builder must, as soon as possible after his plans are completed, arrange for an efficient and adequate staff to seek out customers for the service.

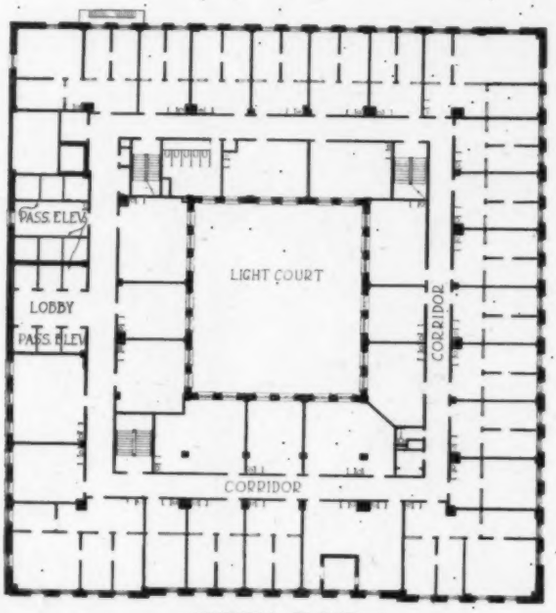
The operating division was created about four months prior to the opening of the building. Therefore it was able to complete the operating organization in sufficient time to insure that each man was properly trained in his duties before any service had to be performed for tenants. Much stress was laid on this detail. The purpose had been to set new standards, if possible, not only in construction, layout, and equipment, but also in the operation of this class of property. From the moment the site was purchased, the thought had been uppermost in mind of developing that intangible, elusive something which is called "atmosphere" and which comes only from exceptional service combined with the right environment and catering to the right class of tenants.

Photos. Edward L. Fowler

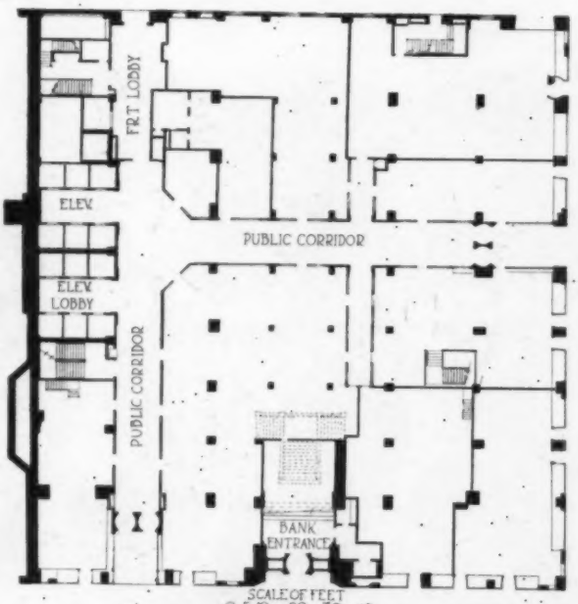
Plans on Back

THE STRAUS BUILDING, CHICAGO

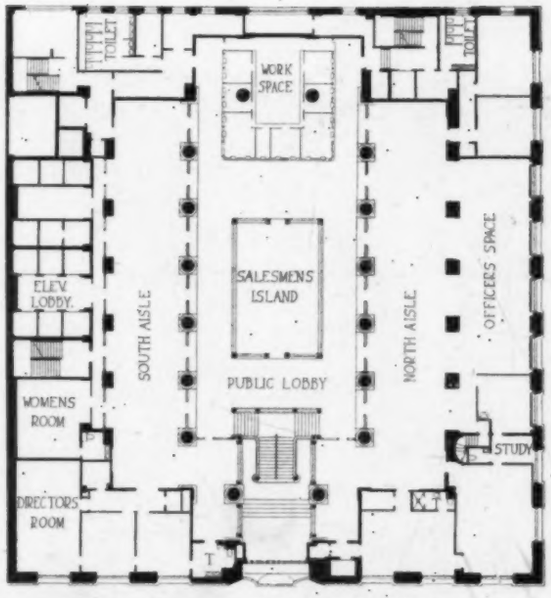
GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



TYPICAL FLOOR



GROUND FLOOR

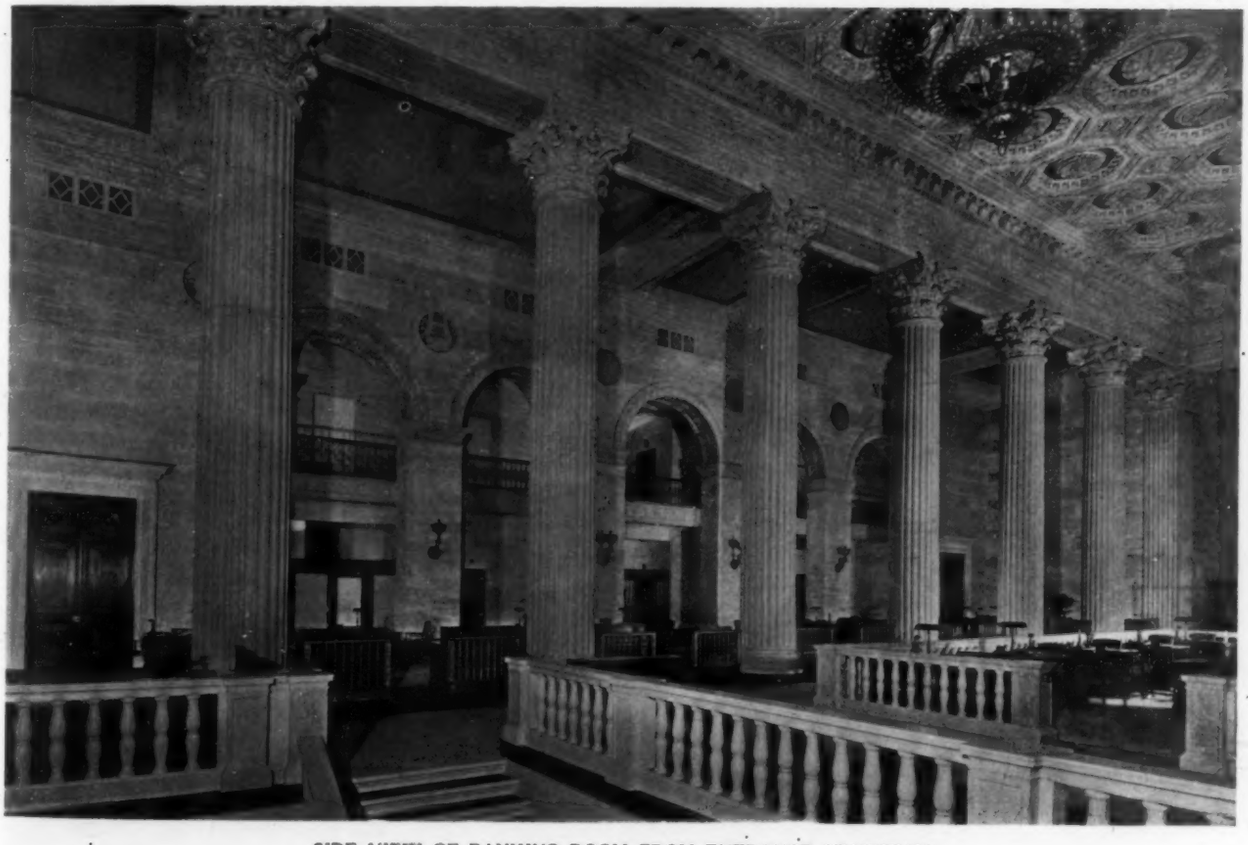


MAIN FLOOR

THE STRAUS BUILDING, CHICAGO

GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS

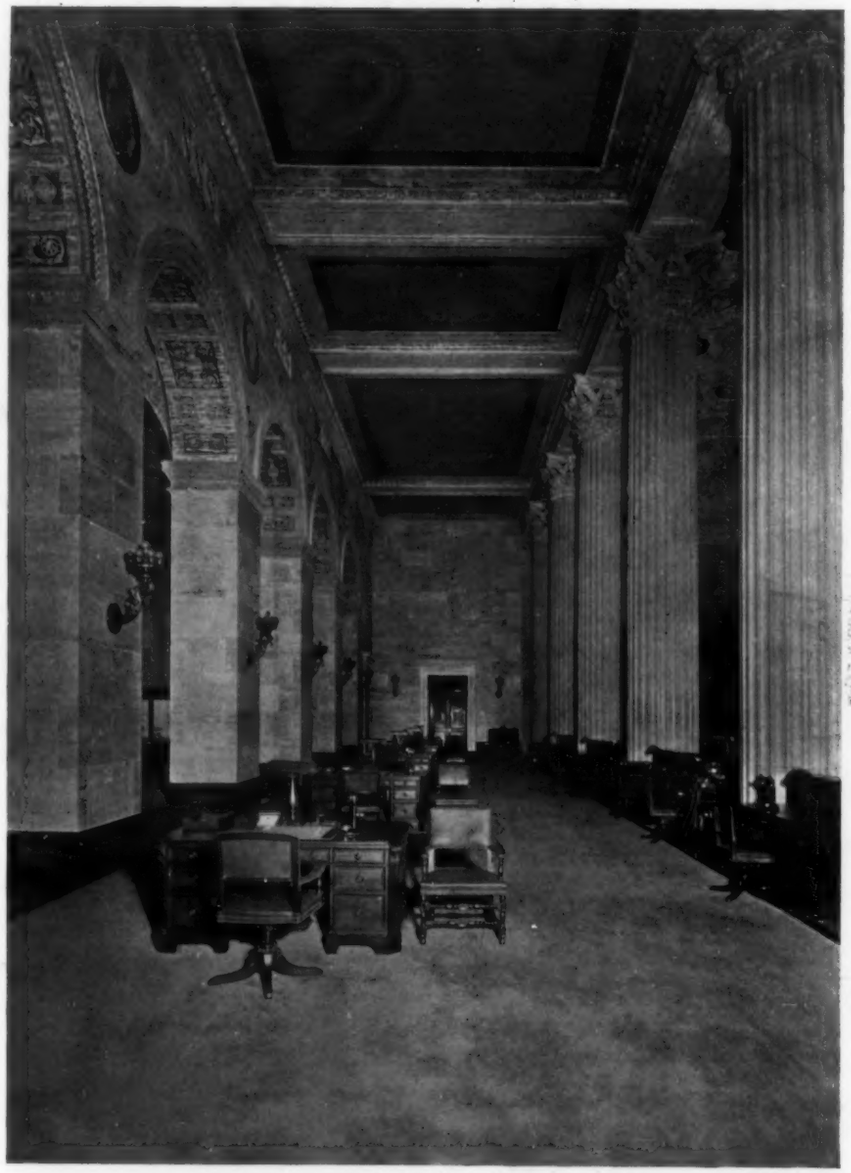
GENERAL VIEW OF BANKING ROOM



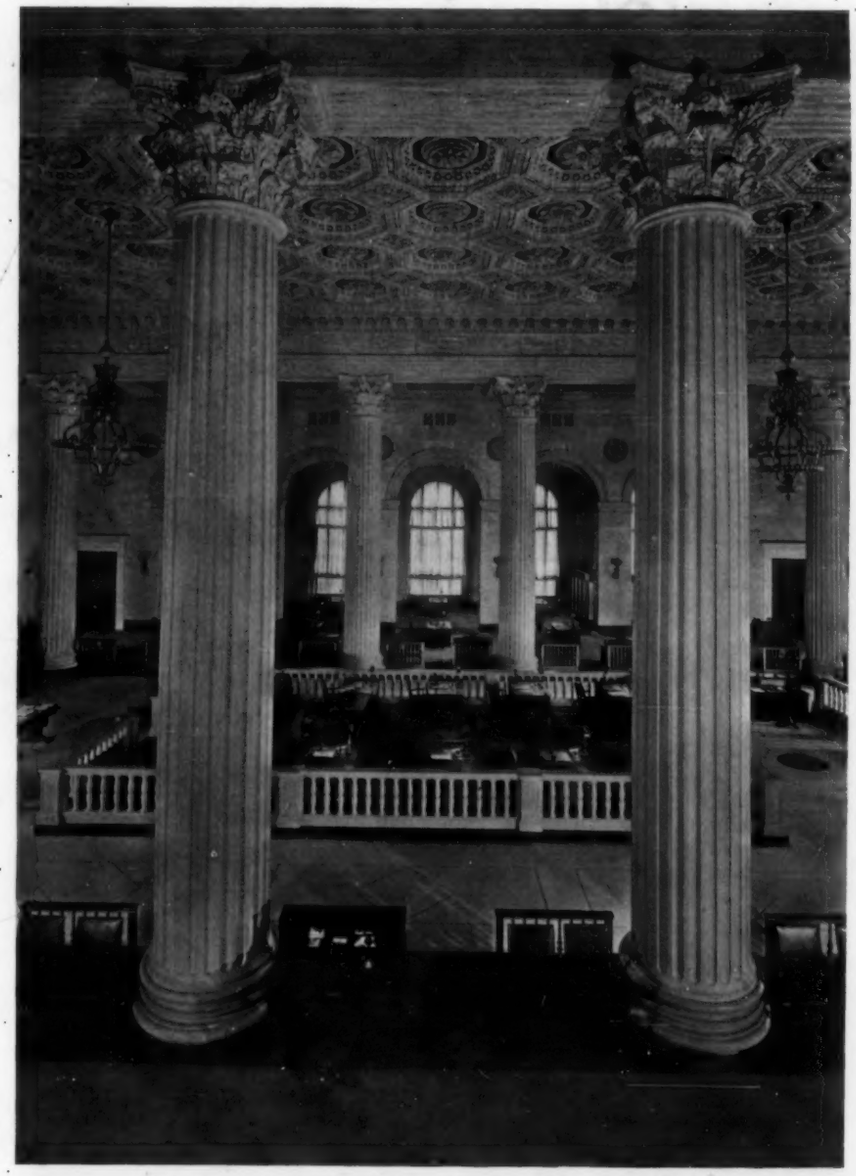
SIDE VIEW OF BANKING ROOM FROM ENTRANCE STAIRWAY

THE STRAUS BUILDING, CHICAGO

GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS



ARCADE AT WEST SIDE OF BANKING ROOM



OFFICERS' ENCLOSURE AT CENTER OF BANKING ROOM

THE STRAUS BUILDING, CHICAGO

GRAHAM, ANDERSON, PROBST & WHITE, ARCHITECTS

ENTRANCE FRONT

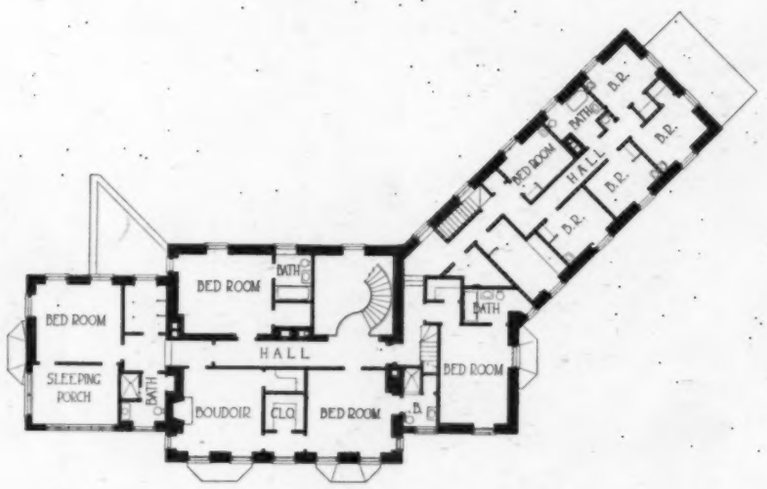
Photos, John Wallace Gillies

Plans on Back

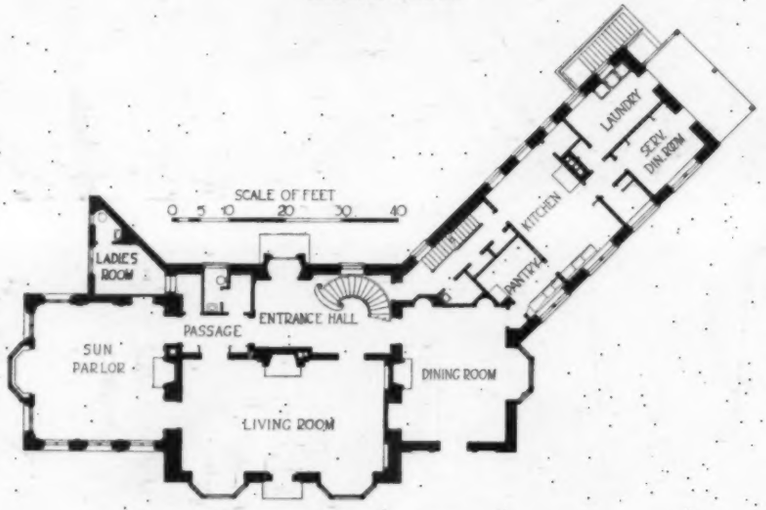
GARDEN FRONT

HOUSE OF J. H. CARSTAIRS, ESQ., ARDMORE, PA.

OFFICE OF JOHN RUSSELL POPE, ARCHITECT



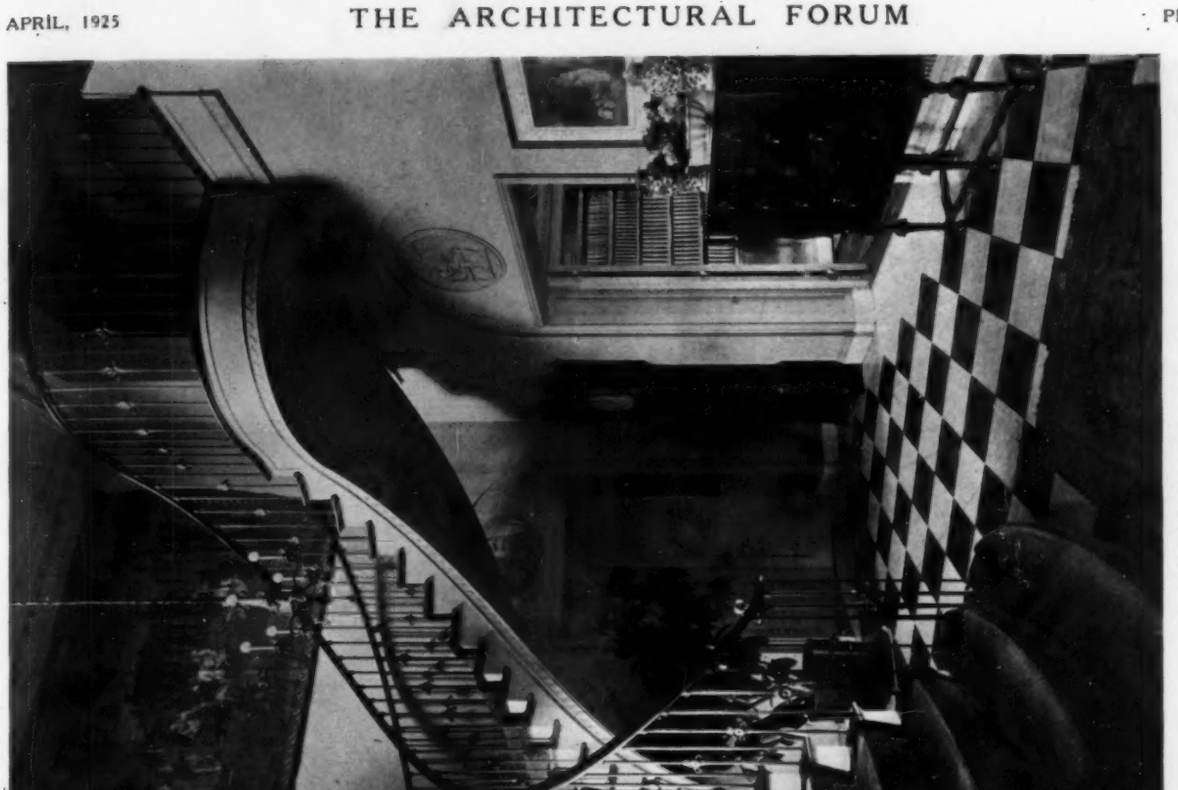
SECOND FLOOR



FIRST FLOOR

HOUSE OF J. H. CARSTAIRS, ESQ., ARDMORE, PA.

OFFICE OF JOHN RUSSELL POPE, ARCHITECT



STAIRCASE ENTRANCE HALL

DETAIL, ENTRANCE DOOR

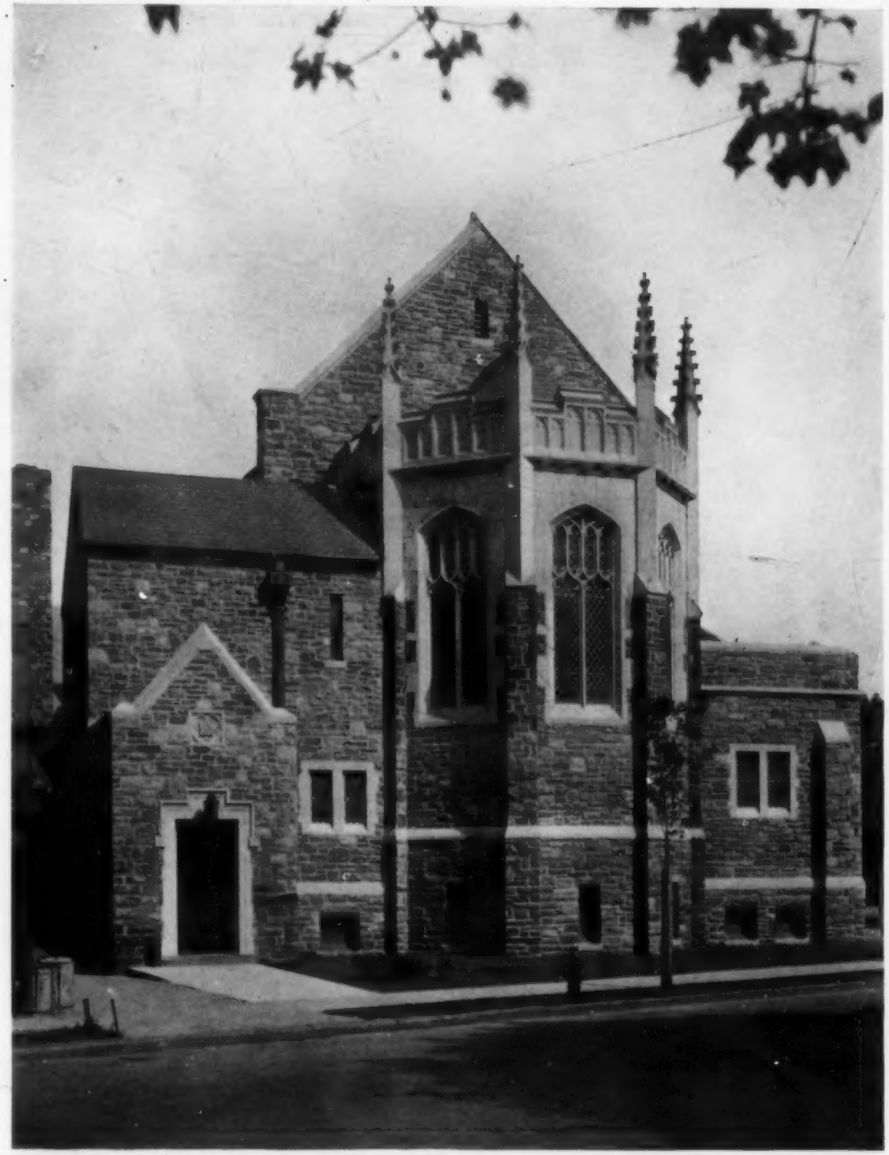
HOUSE OF J. H. CARSTAIRS, ESQ., ARDMORE, PA.
OFFICE OF JOHN RUSSELL POPE, ARCHITECT

LIVING ROOM

DINING ROOM

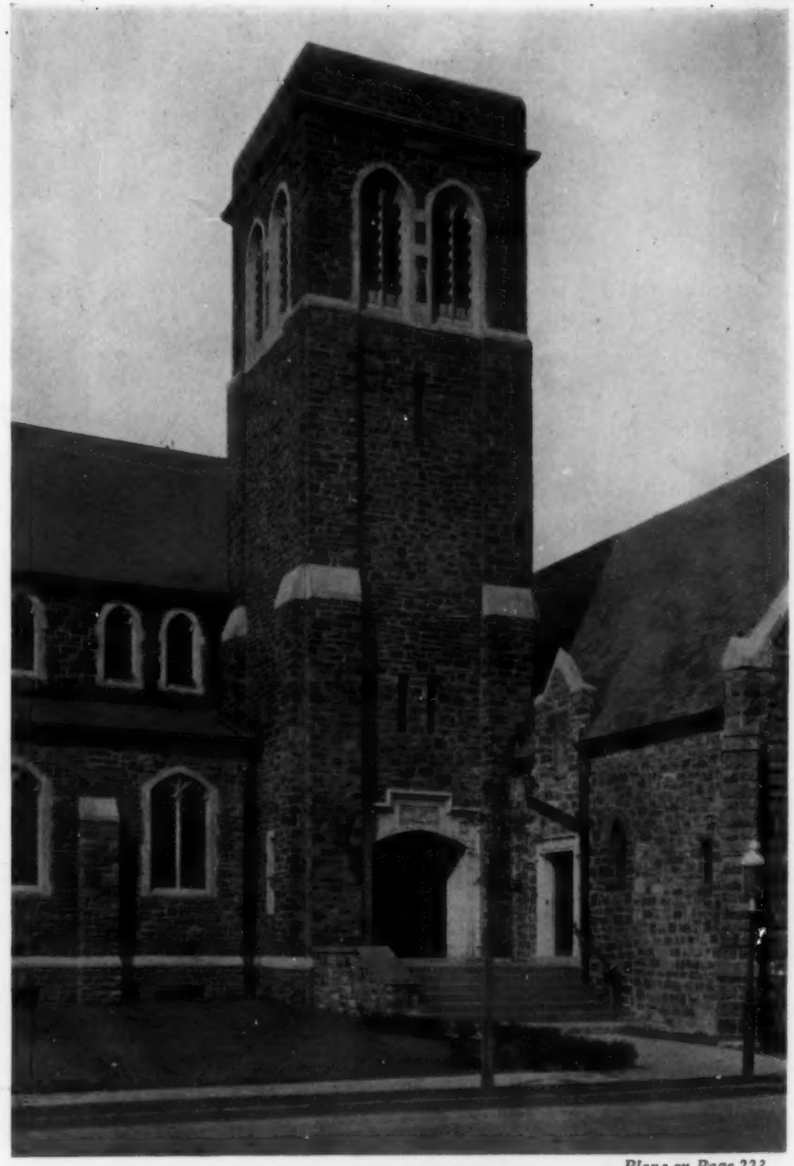
HOUSE OF J. H. CARSTAIRS, ESQ., ARDMORE, PA.

OFFICE OF JOHN RUSSELL POPE, ARCHITECT



Photos. Tebbs & Knell, Inc.

DETAIL OF EAST END

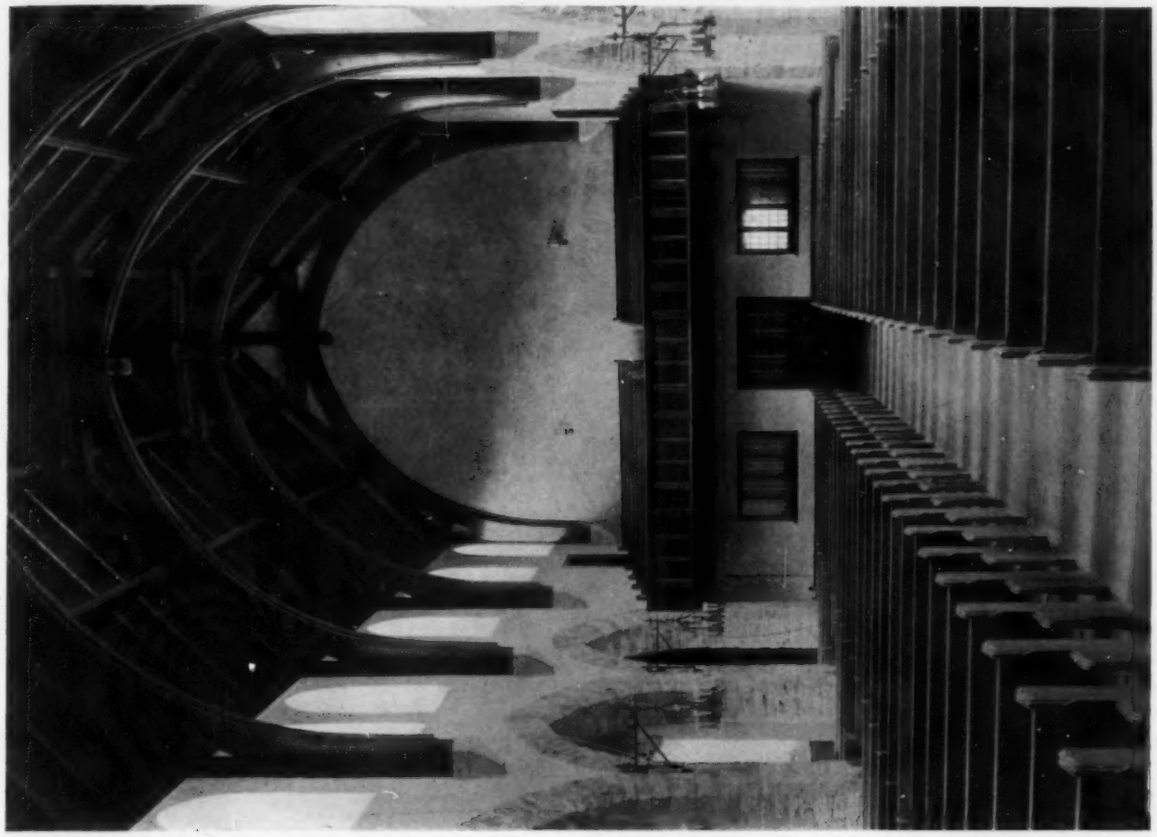


DETAIL, ENTRANCE TOWER

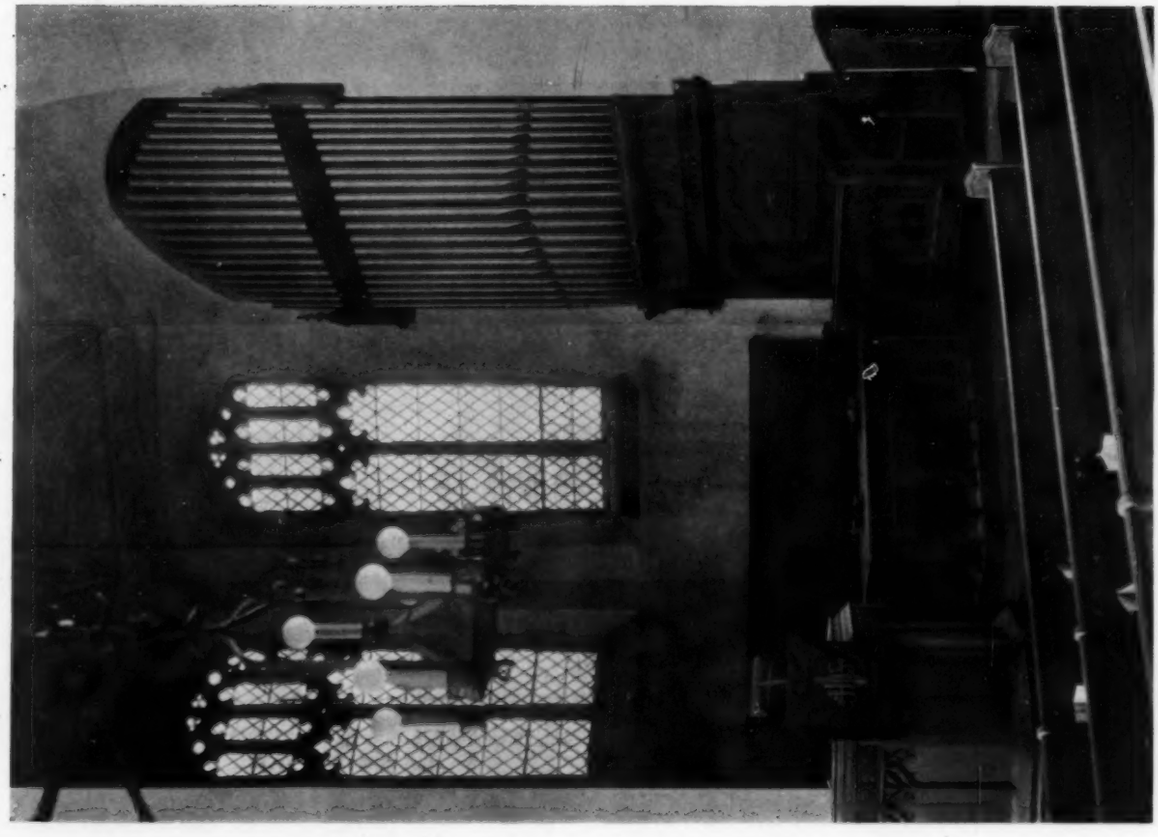
Plans on Page 223

FLATBUSH PRESBYTERIAN CHURCH, BROOKLYN

HOBART B. UPJOHN, ARCHITECT



NAVE, LOOKING WEST



DETAIL OF CHANCEL

FLATBUSH PRESBYTERIAN CHURCH, BROOKLYN, N. Y.
HOBART B. UPJOHN, ARCHITECT

BUSINESS & FINANCE

C. Stanley Taylor, *Editor*

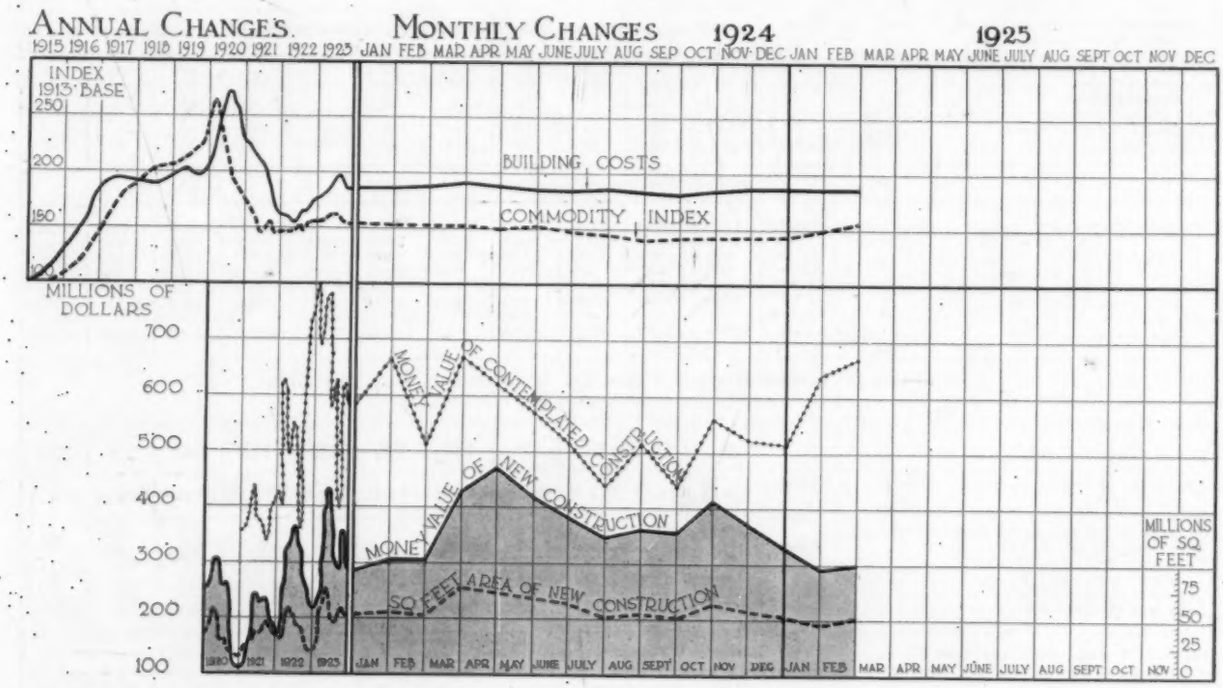
The Building Situation

A MONTHLY REVIEW OF COSTS AND CONDITIONS

DURING the closing months of 1924 some doubt was expressed in many quarters as to the continuation of a large volume of building construction during the year 1925. This doubt was probably somewhat strengthened by the fact that activity had slowed up considerably in the offices of many architects,—a condition which we believe to have been caused by a seasonal falling off of construction activity rather than by any great decrease of interest on the part of prospective investors.

The Annual Survey and Forecast of THE ARCHITECTURAL FORUM, as presented in the January and February numbers, indicated that activity during 1925 would closely approximate the record-breaking building volume of 1924. For the first two months of 1925, as indicated by reports of actual contracts let and plans filed (F. W. Dodge Corporation's figures), it is evident that the January and February building totals showed only a decline of one half of 1 per cent from the totals of the first two months of last year. Naturally, and as predicted by THE FORUM, there has been a considerable shifting of building activity, both in localities and in types of buildings. There has been considerably less activity in the metropolitan area of New York, and a slight decrease in the Northwest, balanced by a slight increase in the central West, while the New England, Pittsburgh and Southeastern districts have shown substantial increases in activity. It is also interesting to note that the total of contemplated new work reported during February of this year represents an increase of 4 per cent over the amount reported in January, and 32 per cent over February of last year.

This prediction is also verified by the fact that since the first of the year the offices of many architects have become quite busy; throughout the profession there is a current of optimism, based on the definite expression of interest on the part of owners.



THESE various important factors of change in the building situation are recorded in the chart given here: (1) *Building Costs.* This includes the cost of labor and materials; the index point is a composite of all available reports in basic materials and labor costs under national averages. (2) *Commodity Index.* Index figure determined by the United States Department of Labor. (3) *Money Value of Contemplated Construction.* Value of building for which plans have been filed based on reports of the United States Chamber of Commerce, F. W. Dodge Corp., and *Engineering News-Record.* (4) *Money Value of New Construction.* Total valuation of all contracts actually let. The dollar scale is at the left of the chart in millions. (5) *Square Foot Area of New Construction.* The measured volume of new buildings. The square foot measure is at the right of the chart. The variation of distances between the value and volume lines represents a square foot cost which is determined first, by the trend of building costs, and second, by the quality of construction.

TABLE I

SPECIFICATIONS

HORIZONTAL TUBULAR STATIONARY BOILERS, WITHOUT DOMES

Built on a Factor of Safety of Five

SHELL IN TWO COURSES. (BOILERS 20 FEET LONG IN THREE COURSES)

A. S. M. E. CODE

BOILERS FOR 100 POUNDS WORKING PRESSURE. LONGITUDINAL SEAM BUTT-JOINT, INSIDE AND OUTSIDE STRAP, DOUBLE RIVETED

Horse Power as rated	**25**	**40**	**50**	**60**	**80**	**100**	**125**	**150**	**180**	**200**	**225**	**250**
Diameter of Boiler in inches by length of Tubes used in feet	**36 x 12**	**44 x 14**	**48 x 16**	**54 x 14**	**60 x 16**	**66 x 16**	**72 x 16**	**72 x 18**	**78 x 18**	**78 x 20**	**84 x 18**	**84 x 20**
Number of Tubes	28	36	28	36	44	54	70	70	88	88	108	108
Diameter of Tubes in inches	3	3	4	4	4	4	4	4	4	4	4	4
Square Feet of Heating Surface about	312	462	555	613	839	1013	1280	1436	1774	1964	2144	2376
Length of Grates in inches	48	54	54	54	54	54	54	60	60	66	60	66
Thickness of Shell "	1/4	5/16	5/16	5/16	3/8	7/16	13/32	15/32	1/2	1/2	1/2	1/2
Thickness of Heads "	5/16	7/16	7/16	7/16	1/2	1/2	1/2	1/2	9/16	9/16	5/8	5/8
Diameter of Smoke Stack "	16	22	24	26	28	30	34	34	38	38	42	42
Length of Smoke Stack in feet	40	50	60	50	60	60	60	60	60	70	80	80
SHIPPING WEIGHTS. (Approximate)												
Weight of Bare Boiler pounds	3500	5400	7300	7800	11100	12700	15500	17200	21600	23600	24800	27100
" Front as Specified "	1500	2000	2200	2600	2900	3300	3600	3600	4200	4200	4800	4800
" Grates "	600	800	900	1000	1100	1200	1300	1500	1600	1800	1700	2000
" Other Castings "	400	500	600	600	800	900	1000	1000	1000	1100	1100	1100
" Trimmings "	100	150	150	150	150	150	200	200	200	200	250	250
" Stack and Guys "	600	900	1200	1100	1400	1900	2100	2100	3200	3700	5300	5300
Total Weight Complete pounds	6700	9750	12350	13250	17450	20150	23700	25600	31800	34600	37950	40550

BOILERS FOR 125 POUNDS WORKING PRESSURE. LONGITUDINAL SEAM BUTT-JOINT, INSIDE AND OUTSIDE STRAP, TRIPLE RIVETED, 78 AND 84 INCH BOILERS QUADRUPLE RIVETED

Horse Power as rated	**45**	**50**	**60**	**80**	**100**	**125**	**150**	**180**	**200**	**225**	**250**
Diameter of Boiler in inches, by length of Tubes used in feet	**48 x 14**	**48 x 16**	**54 x 14**	**60 x 16**	**66 x 16**	**72 x 16**	**72 x 18**	**78 x 18**	**78 x 20**	**84 x 18**	**84 x 20**
Number of Tubes, 4 inches in diameter	28	28	36	44	54	70	70	88	88	108	108
Length of Grates in inches	54	54	54	54	54	54	60	60	66	60	66
Thickness of Shell "	11/32	11/32	5/16	13/32	7/16	1/2	1/2	1/2	1/2	17/32	17/32
Thickness of Heads "	7/16	7/16	7/16	1/2	1/2	1/2	1/2	9/16	9/16	5/8	5/8
Diameter of Smoke Stack "	24	24	26	28	30	34	34	38	38	42	42
Length of Smoke Stack in feet	50	60	50	60	60	60	60	60	70	80	80
SHIPPING WEIGHTS. (Approximate)											
Weight of Bare Boiler pounds	7100	8000	8700	11900	13900	17300	19200	22400	24500	26200	28700
" Front as Specified "	2200	2200	2600	2900	3300	3600	3600	4200	4200	4800	4800
" Grates "	900	900	1000	1100	1200	1300	1500	1600	1800	1700	2000
" Other Castings "	600	600	600	800	900	1000	1000	1000	1100	1100	1100
" Trimmings "	150	150	150	150	150	200	200	200	200	250	250
" Stack and Guys "	1000	1200	1100	1400	1900	2100	2100	3200	3700	5300	5300
Total Weight Complete pounds	11950	13050	14150	18250	21350	25500	27600	32600	35500	39350	42150

BOILERS FOR 150 POUNDS WORKING PRESSURE. LONGITUDINAL SEAM BUTT-JOINT, INSIDE AND OUTSIDE STRAP, QUADRUPLE RIVETED

Horse Power as rated	**45**	**50**	**60**	**80**	**100**	**125**	**150**	**180**	**200**	**225**	**250**
Diameter of Boiler in inches, by length of Tubes used in feet	**48 x 14**	**48 x 16**	**54 x 14**	**60 x 16**	**66 x 16**	**72 x 16**	**72 x 18**	**78 x 18**	**78 x 20**	**84 x 18**	**84 x 20**
Number of Tubes, 4 inches in diameter	28	28	36	44	54	70	70	88	88	108	108
Length of Grates in inches	54	54	54	54	54	54	60	60	66	60	66
Thickness of Shell "	3/8	3/8	19/32	7/16	1/2	17/32	17/32	19/32	19/32	5/8	5/8
Thickness of Heads "	7/16	7/16	7/16	1/2	1/2	1/2	1/2	9/16	9/16	5/8	5/8
Diameter of Smoke Stack "	24	24	26	28	30	34	34	38	38	42	42
Length of Smoke Stack in feet	50	60	50	60	60	60	60	60	70	80	80
Guys of 70′ stacks cover one set only. SHIPPING WEIGHTS. (Approximate)											
Weight of Bare Boiler pounds	7400	8300	9200	12600	15200	18400	20300	24600	26800	28500	31400
" Front as Specified "	2200	2200	2600	2900	3300	3600	3600	4200	4200	4800	4800
" Grates "	900	900	1000	1100	1200	1300	1500	1600	1800	1700	2000
" Other Castings "	600	600	600	800	900	1000	1000	1000	1100	1100	1100
" Trimmings "	150	150	150	150	150	200	200	200	200	250	250
" Stack and Guys "	1000	1200	1100	1400	1900	2100	2100	3200	3700	5300	5300
Total Weight complete pounds	12250	13350	14650	18950	22650	26600	28700	34800	37800	41650	44850

Specifications to accompany article on Heating and Power Plants beginning on opposite page.

ENGINEERING DEPARTMENT

Power and Heating Plants

THE GENERATING PLANT; BOILERS

By J. J. COSGROVE

EDITOR'S NOTE—This is the first of a series of brief informative treatises covering the various important phases of heating and power plants with installation requirements. Mr. Cosgrove, who is well known as a contributor to the editorial columns of leading technical journals, has here contributed knowledge gained during 30 years of practical experience in this field. The discussion of boilers will be followed by articles on the various other topics connected with heating plants.

IN studying the subject of power and heating plants, brief consideration will be given first to boiler room dimensions. The standard heights for ceilings of boiler rooms in government buildings, adopted by the Supervising Architect's office, Washington, are given below. The horse powers referred to are the manufacturers' rated horse powers, based on the exposed heating surface, 10 square feet of surface being considered the equal of 1 horse power.

For boilers of	100 to 150	h.p.	14'-6" ceilings
For "	150 to 175	" "	15'-0" "
For "	175 to 200	" "	15'-6" "

The present tendency in boiler practice is toward higher settings on account of the increasing rates of combustion, which require more space in the furnace and combustion chambers for the burning of the volatile gases distilled from the coal. Higher settings are required also for oil-burning plants, stoker-fired boilers, and pulverized coal furnaces, so for present practice ceilings of from 25 to 28 feet will be found more satisfactory, as these heights allow space above the boilers for the piping. Boiler houses are generally designed with plenty of headroom, space being provided for the coal bunkers.

The floor space required in a boiler room will depend largely upon the type of boilers installed. For instance, a 250 h.p. return-tubular boiler, hand-fired, occupies a floor area approximately 9 feet by 26 feet, or 234 square feet. An average sized hand-fired, water-tube boiler of the same capacity, requires a floor area 9 feet by 19 feet, 9 inches, which equals an area of only 178 square feet. There are other water-tube boilers which occupy still less floor space. This is important to know, since often a building outgrows its boiler capacity, and there is but little space available in the boiler room for an additional boiler. There is then a choice of several means of increasing the capacity without building another boiler room or enlarging the old room at the expense of rentable space. If the boilers are hand-fired, forced draft can be introduced, using the existing boilers. If that does not produce sufficient horse power, mechanical stokers or oil-burning apparatus can be installed. If the boilers are of the return-tubular type, they can be replaced by water-tube boilers, which will give greater horse power, space for space. Even when water-tube boilers, forced beyond their rated capacities by means of forced draft and mechanical stokers, fall short of requirements, other types of water-tube boilers which occupy much less floor area per rated horse power can be set in their places, thereby adding to the capacity about 50 per cent. Take for example the maximum output in the space occupied by a 250 h.p. hand-fired, return-tubular boiler. By selecting compact water-tube boilers of equal floor area, and equipping them with mechanical stokers and forced draft, pulverized coal burners or oil-burning appa-

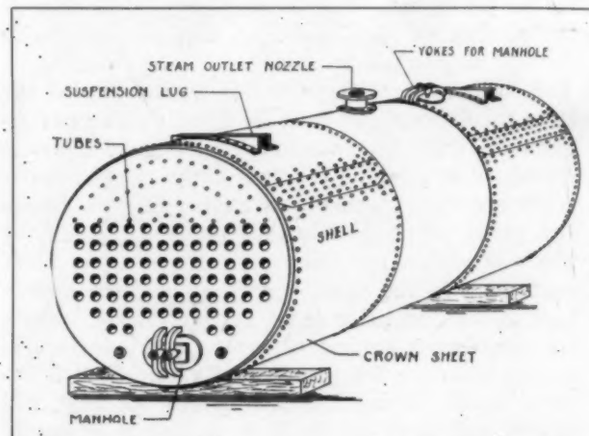


Fig. 1. Horizontal Return-Tubular Boiler

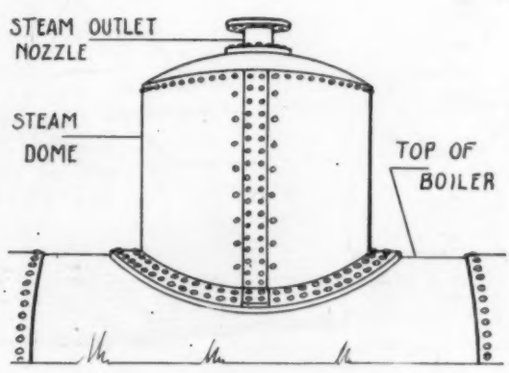


Fig. 2. Steam Dome for Return-Tubular Boiler

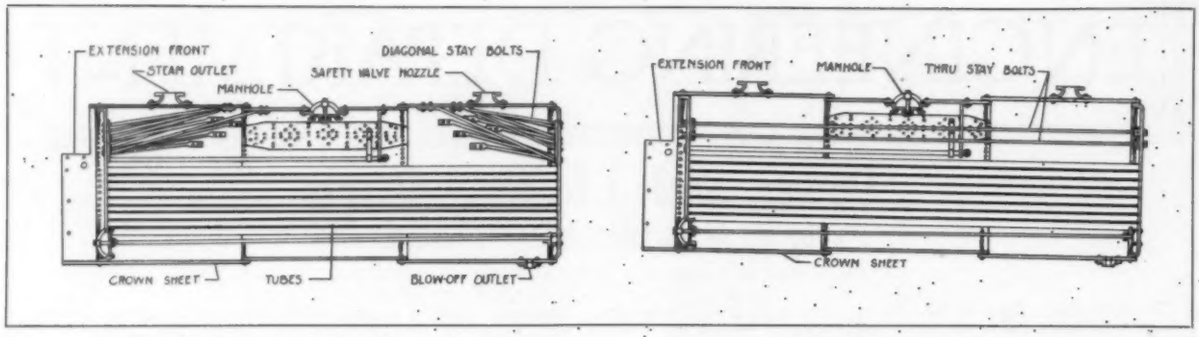


Fig. 3. Interior of Return-Tubular Boiler with Diagonal Stay Bolts

Fig. 4. Interior of Return-Tubular Boiler with Through Stay Bolts

ratus, the floor space can be made to yield over 1,000 boiler horse power, which is often advantageous.

In a city building the boiler room is generally located in the basement or sub-basement. This is not absolutely necessary, but it is desirable, since it permits of gravity circulation from all parts of the structure. For this reason, too, power houses for groups of buildings are often located at the lowest part of the institution grounds or the college campus.

Horizontal Return-tubular Boiler. There are several types and many varieties of boilers used for power and heating purposes. The several types are the fire-tube boiler, the water-tube boiler, the internally-fired, locomotive type, and the cast iron house heating boiler. A fire-tube boiler is illustrated in Fig. 1. It is called also a return-tubular boiler, and a horizontal-tubular boiler. It is simply a huge cylindrical tank, which when in service is partly filled with water. Heat is applied to the boiler at the bottom, but in order to abstract as much of the heat of the burning fuel as possible, tubes pass through the boiler from end to end, and the hot flames and gases passing through these tubes transmit their heat to the water within. They are fire-tube boilers, because fire and not water is inside of the tubes. They are return-tubular boilers, because the smoke, flames and gases, after passing from the furnace through the combustion chamber to the rear of the boiler, return again to the front through the tubes to the breeching. They are called horizontal-tubular boilers to distinguish them from vertical-tube boilers. This type of boiler is much used.

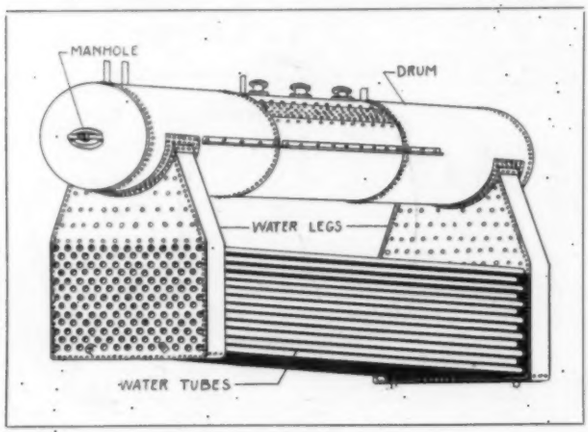


Fig. 5. Water-Tube Boiler

The smaller sizes of boilers, that is boilers of less than 54 inches in diameter, have steam domes as shown in Fig. 2. Boilers of 54 inches and more in diameter do not need domes, as the disengaging surface for the liberation of steam is sufficient without. Stock sizes of return-tubular boilers range all the way from those 3 feet in diameter and 12 feet long to 8 feet in diameter and 20 feet long. They are usually made according to the A. S. M. E. Code, that is, in accordance with the Boiler Code of the American Society of Mechanical Engineers. Specifications for horizontal stationary boilers without domes can be found in Table 1 on page 240.

The average age of lap-seam horizontal return-tubular boilers over 36 inches in diameter, carrying over 50 pounds pressure but less than 100 pounds, is approximately 20 to 25 years; when carrying over 100 pounds pressure, from 15 to 18 years. With good care, however, and with freedom from corrosive feed waters, they will last much longer. The interior of a horizontal-tubular boiler is illustrated in Fig. 3. The flat surfaces of the heads or tube sheets above the tubes are braced with diagonal stay bolts to prevent bulging from the pressure when the boilers are in use. The tubes strengthen the rest of the surface of the heads. A similar boiler with through stay bolts or bracing rods is shown in Fig. 4. The shells of both these boilers extend beyond the from tube sheets, so these are known as extension-front boilers. An unmounted water-tube boiler is illustrated in Fig. 5. Whereas in the return-tubular boiler the water surrounds the tubes, and the flames and gases are within, in the water-tube boiler the water is within the tubes and the flames and hot gases play on the tubes from outside. The advantage is thus on the side of the water-tube boilers, for the heating surface of a tube is the surface in contact with the hot gases and flames. That is because water, having a great capacity for heat, will absorb and carry off the heat as fast as it can be applied to the tubes. It follows that the sizes of

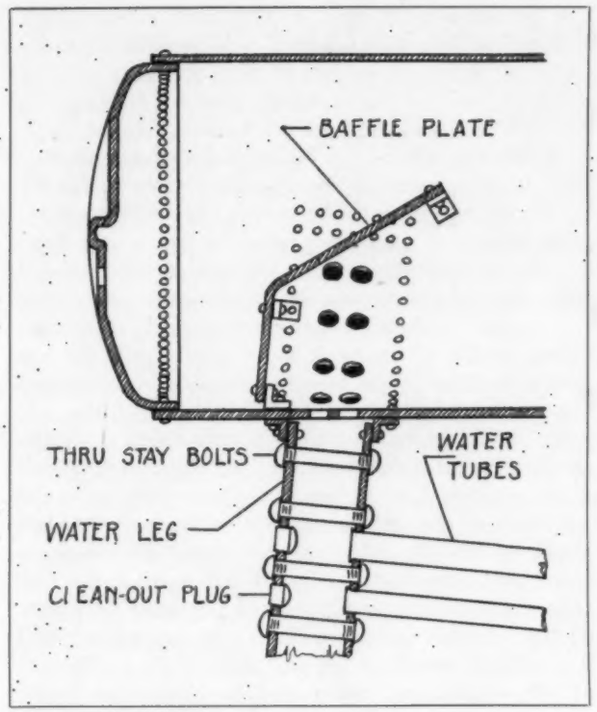


Fig. 6. Detail of Water Leg in Water-Tube Boiler

the tubes being equal, the water-tube boiler would have the greater surface per lineal foot of the tube by just so much as the outer area of the tube exceeds the inner area, and these areas, of course, vary.

The openings in the face sheets of the water legs are opposite the tubes, and are solely for cleanout purposes, being plugged or capped when the boilers are in service. This is illustrated in Fig. 6, which likewise shows the way the flat surfaces of the water legs are braced with stay bolts spaced uniformly throughout the sheets. Water legs are characteristic of all water-tube boilers. In service, particularly where the water is hard, the interiors of the water tubes become incrusted with lime, and the lime is cut, broken or turbined out through the cleanout openings. Stock sizes of water-tube boilers range from those of 150 to 500 horse power, and for pressures of from 150 to 200 pounds per square inch. Boilers of larger sizes or for greater pressures are made on special order when needed.

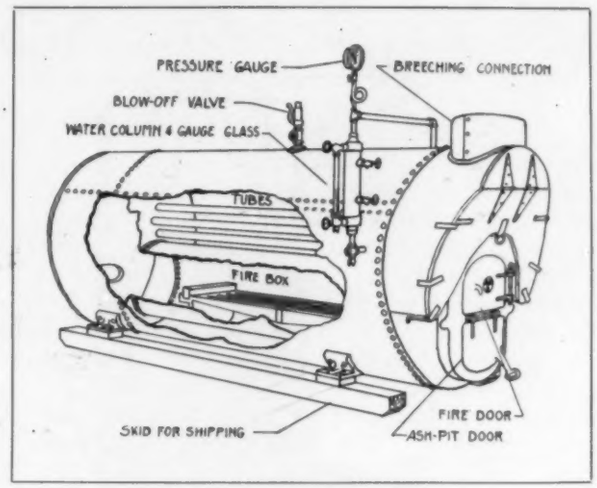


Fig. 7. Scotch Marine Boiler

There are certain requirements for a good power steam boiler which may be briefly given here: Strength to withstand any reasonable pressure or stress. Freedom from strains, due to unequal expansion, and freedom from joints exposed to the direct action of fire. A combustion chamber of sufficient size, and so arranged that the combustion of the gases started in the furnace may be completed

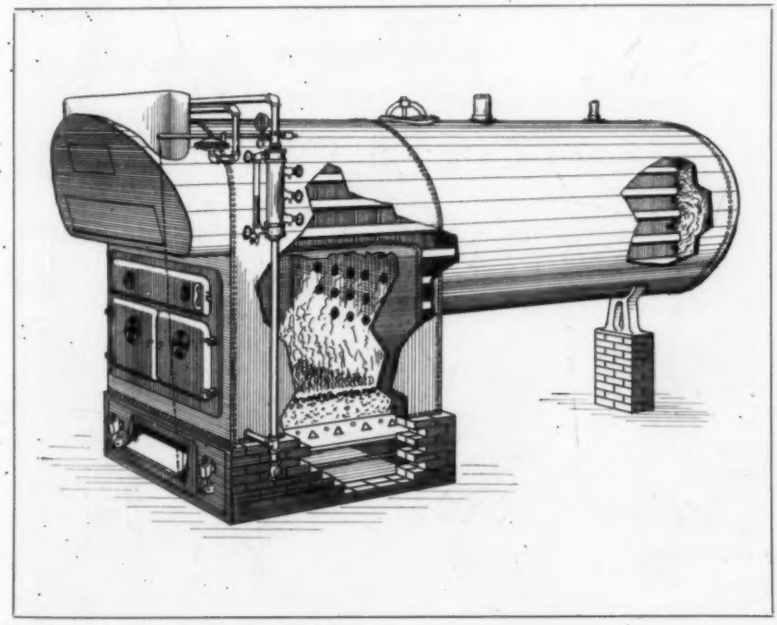


Fig. 8. Locomotive Type of Boiler

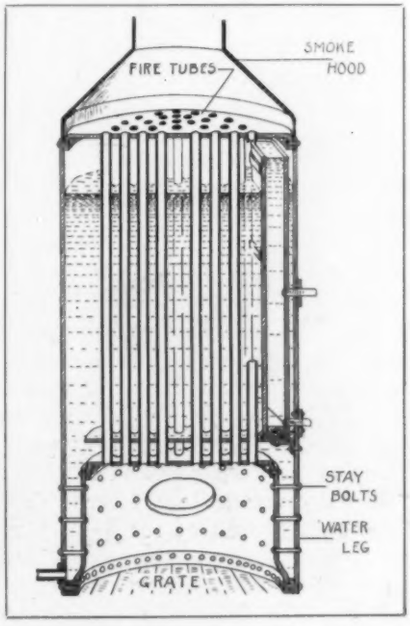


Fig. 9. Vertical Fire-Tube Boiler

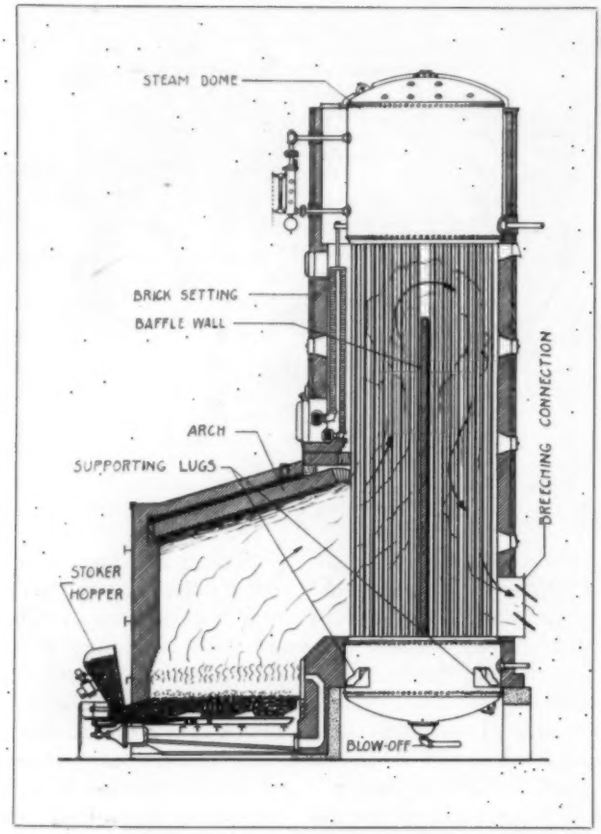


Fig. 10. Vertical Water-Tube Boiler

before the gases escape up the chimney. A steam and water capacity sufficient to prevent any fluctuation in steam pressure or water level. A water surface of sufficient area for the disengagement of the steam from the water, and of sufficient extent to prevent foaming. A constant and thorough circulation of water throughout the boiler to maintain all parts at approximately the same temperature.

Scotch Marine Boiler. A marine type Scotch boiler, or a Scotch marine boiler, is illustrated in Fig. 7. This is an internally-fired boiler, the furnace being enclosed within the boiler shell. From the furnace the flames and hot gases pass to the combustion chamber at the rear, then return to the front of the boiler through the tubes to the breeching. The enclosed furnace makes this type of boiler particularly free from draft leaks, and all heating surface is of the best; therefore it is a very efficient boiler. It can be set in brick, covered with sheet metal, or used exposed as shown. The Scotch marine is a type of boiler used extensively in marine work. A locomotive or firebox type of boiler is illustrated in Fig. 8. In this type the furnace is located below the boiler and is wholly or partly surrounded by water legs, thereby deriving the benefit of the direct heat of the fire. The smoke and hot gases pass through tubes to a chamber at the rear of the boiler, then return through another set of tubes to the front of the shell, where the smoke outlet is located. This type of boiler is used for low pressure work and heating and similar uses.

Vertical Fire-tube Boiler. A vertical fire-tube boiler is shown in section in Fig. 9. This type of boiler is used for power rather than for heating. It is a favorite portable type for hoisting engines.

A vertical water-tube boiler is illustrated in Fig. 10. It is supported by lugs at the bottom so the top is free to expand with the heat. Like all the water-tube boilers, it is used primarily for power purposes. Water-tube boilers are sometimes enclosed with steel plates instead of brick walls, since that saves space. Again, they are encased with steel plates outside of the brick walls to cut down the loss due to leaking of air into the furnace and combustion chambers through the brick walls of the setting. It is estimated that the losses due to radiation and infiltration of air into the boiler setting will average from 2 to 10 per cent, depending upon the condition of the setting and size of the boiler. Steel plates backed by asbestos mill board or magnesia block and asbestos mill board will reduce the loss from radiation approximately 2 per cent over that of a good brick setting without the steel casing, and will prevent much of the loss due to the infiltration of air which may amount to another 5 per cent. Steel plate or steel plate backed by asbestos mill board is not so effective as magnesia block and asbestos mill board in preventing loss due to radiation, although it is equally effective in preventing infiltration of air. A cast iron sectional boiler is shown in Fig. 11. This is a low pressure heating boiler for working pressures not exceeding 10 pounds per square inch. It is never used for power, and is not nearly so efficient or economical as fire-tube or water-tube boilers. It is used mainly for house heating, and is made in sizes much smaller than the stock sizes of tubular boilers generally carried.

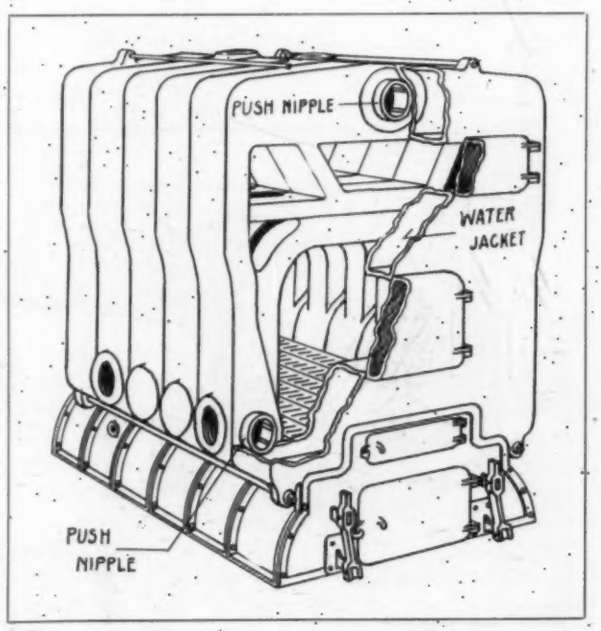


Fig. 11. Cast Iron Sectional Boiler

House of Dudley N. Hartt, Esq., Chestnut Hill, Mass.

RICHARDSON, BAROTT & RICHARDSON, ARCHITECTS

By CHESTER L. CHURCHILL

THE small house presents to the architect a distinct problem, which requires for its successful solution as much of his time and skill as that of the large house. This is because a majority of the requirements are the same, while there are others which are different and more difficult to secure. A suitable entrance, effective grouping of the master living quarters, isolated but closely related service quarters both inside and outside the house, distinctiveness of exterior design, which must be appropriate to the size and character of the building, and proper location on the ground available, are requirements common to both types of houses. However, in the case of the small house, the financial aspect of the architectural problem and the amount of area which it is possible to use in developing the plan are factors of vital importance. Happily, these considerations are not likely to be quite so pressing in larger work, and this in some measure explains why our larger country house architecture is superior generally to that of the smaller buildings.

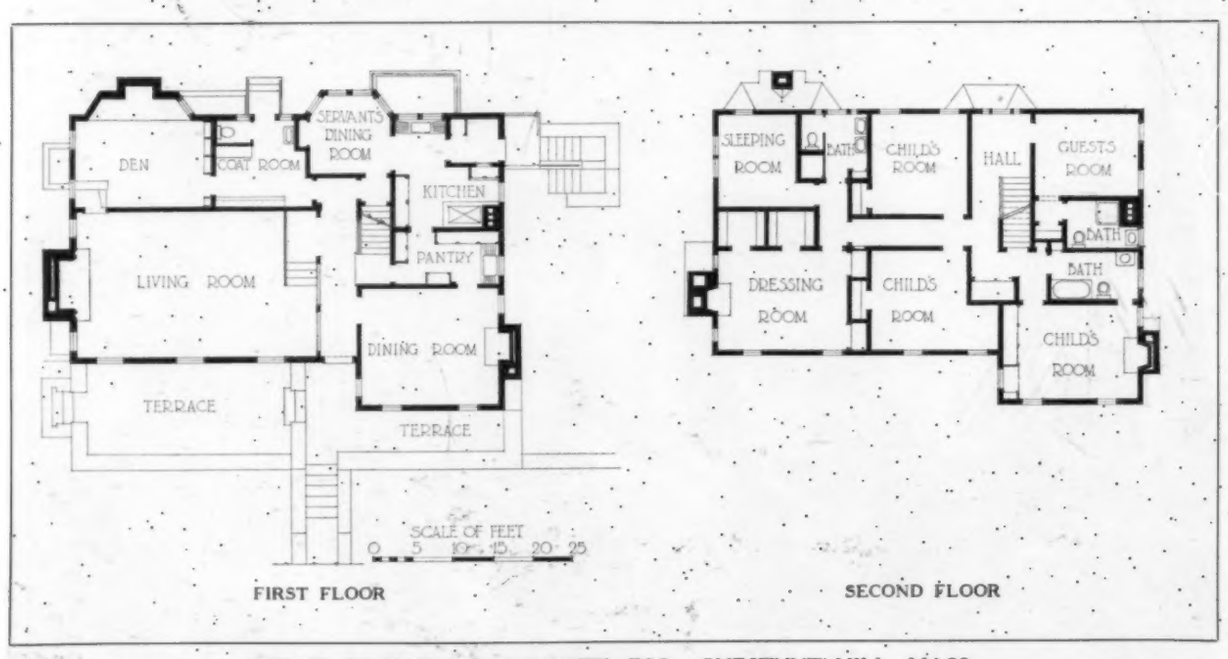
The problem of properly locating the house is of the first importance in small work, where the land is usually restricted in area. In the Dudley N. Hartt house at Chestnut Hill, Mass., the site was of fair size and made up largely of ledges, with a sort of rocky knoll near the center, the land dropping rather sharply to the street and sloping in ledge formation on the other sides. Natural growth peculiar to this soil was quite plentiful, although some of the best trees had been nearly ruined by storms. The solution was to place the house on the ledge, on the part dominating the lot, and to relate it to the character of the site by building the lower part of the house of the existing stone, and by emphasizing in the mass of the structure the lofty character suggested by the topography of the site. The unevenness of the ground allowed further relation of the house to the topography by the use of stone terraces, steps and walls, which were very important in completing the design and uniting the house pictorially to the land. The problem of blasting influenced the decision of placing the garage under the house, thus forming a forecourt from which the main part of the house and also the service quarters are entered. A wall was built, continuing the line of terraces to screen the service yard and service entrance from the forecourt and the street, adding much to the effet.

Of no less importance than the development of a site for a small house is the practical working out of the floor plans which, when well done, make for the success of the house. Every inch of area must

Photos. Maynard Workshop

Entrance Forecourt, Showing Garage Under Terrace

ENTRANCE DOOR AND LIVING ROOM WINDOWS ON TERRACE LEVEL



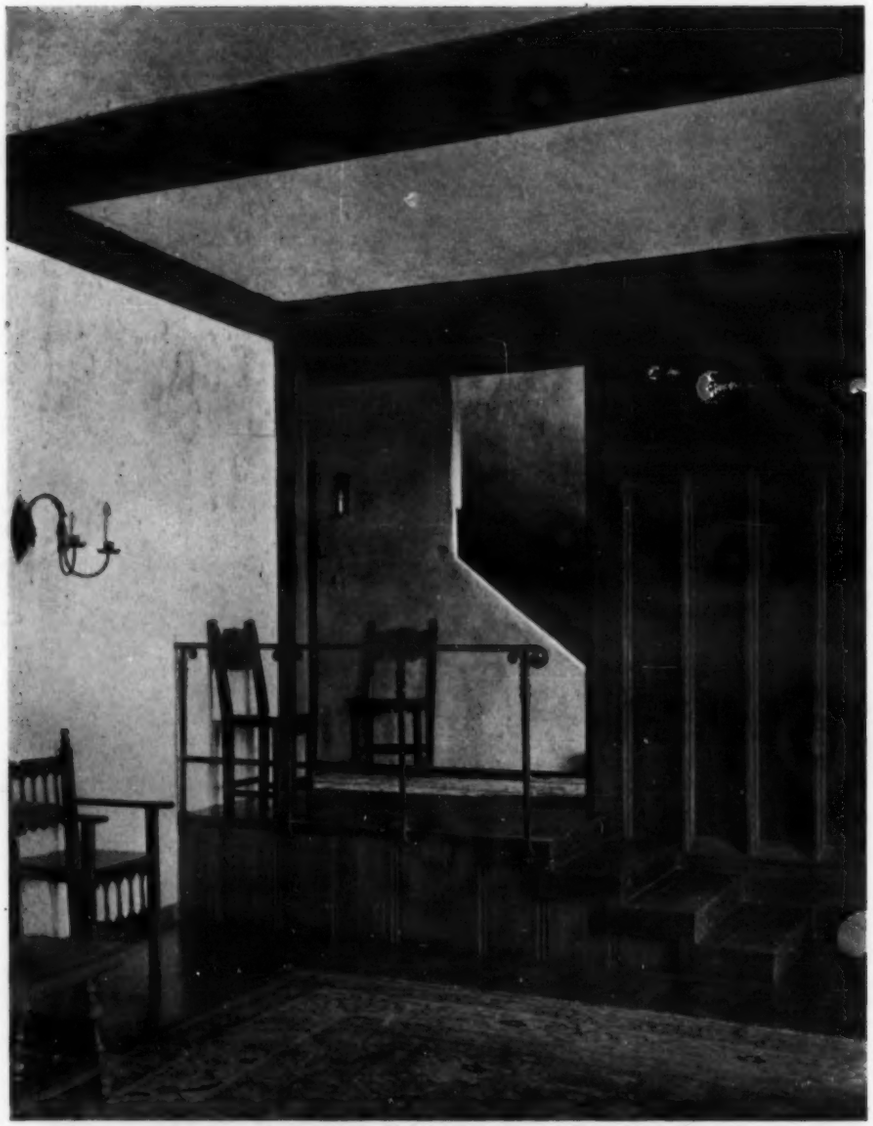
HOUSE OF DUDLEY N. HARTT, ESQ., CHESTNUT HILL, MASS.
RICHARDSON, BAROTT & RICHARDSON, ARCHITECTS

be utilized and carefully considered as to the relation between the design of the house and the treatment of the grounds. Compactness of layout and good planning must have equal consideration, which combination is the salient feature of the Hartt house. At the owner's request, the plan centers around the stairway. To increase the apparent size of the hallway, which because of the restricted area could not be large, a heavy wood screen instead of a wall was placed between the hall and living room, at one side of which, and open part of the way, rises the staircase. The second floor presents an arrangement wholly in keeping with the compactness required, and includes a guests' bedroom with closet and private bathroom; three large bedrooms for children, with closets and a bathroom; an owner's suite of hall, dressing room, closets, sleeping room and bath; and linen and housemaids' closets, all of which are grouped about the hallway on this floor, the length between outside walls being only 52 feet. Fireplaces add to the comfort of two of the rooms.

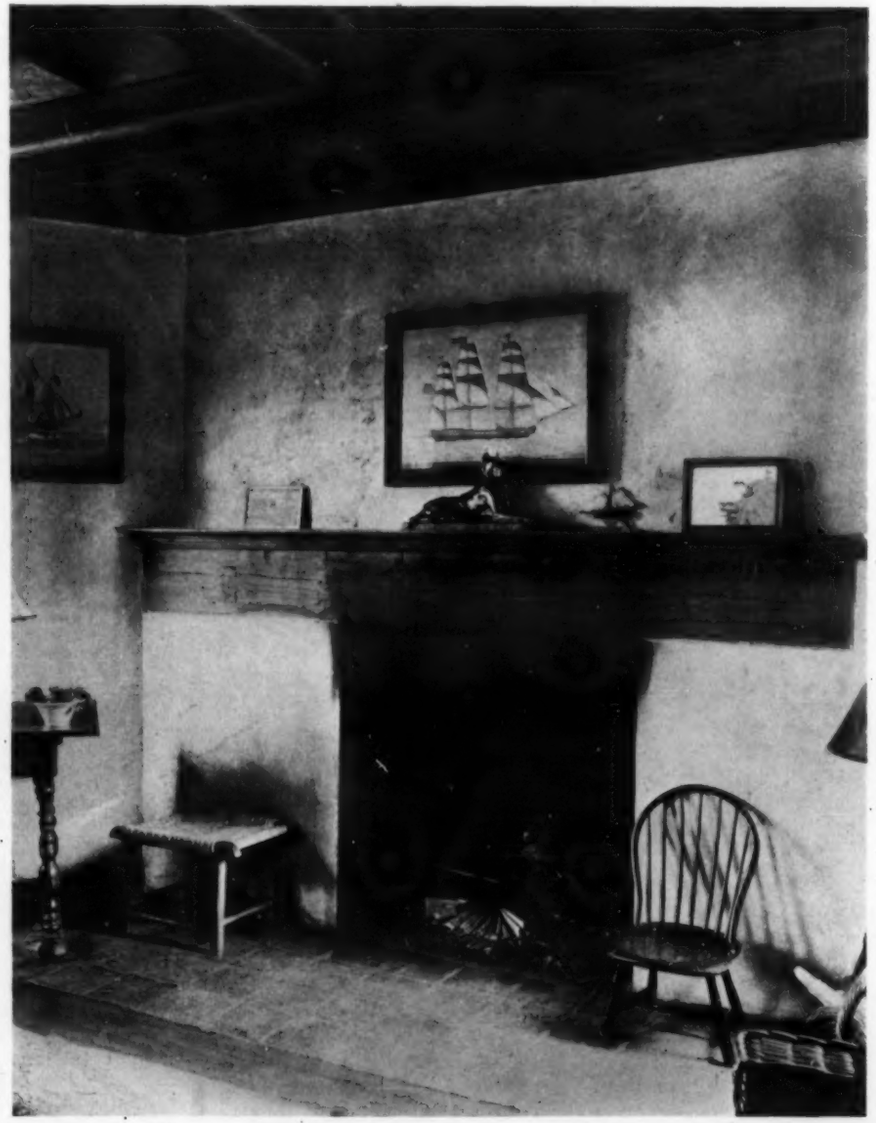
In the first floor plan, the aim of which was to achieve the same result, the hallway, from which the dining room opens, and from which the stairway to the second floor ascends, is given an appearance of spaciousness, first through the employment of the wood screen already mentioned and also through the large opening into the living room which opens onto a platform from which steps descend to the living room floor level. Beyond this opening a door opens into the coat room, beyond which room, with its toilet and entrance door into the garden, is the "den," also communicating with the living room by a few steps and a door. From the main part of the first floor there are three service doors,—one from the dining room to the pantry; one from the main stairway to the pantry; and one from the hall, which enters a lobby giving access to both the basement stairs and to the kitchen, performing the function of double doors placed between the main house and the service quarters, and allowing the basement to be entered from either main house or service quarters without going from one through the other. From the kitchen open the butler's pantry, the servants' dining room, and the rear hall with its store closet and refrigerator.

After the setting and plan of the house comes consideration of the design,—the relating of the house to the character and topography of the site, the exterior indication of the plan, the choosing of proper building materials, and technically handling them to achieve the most picturesque and individual results. With the type of site established here by nature, a style bordering on that of the French farmhouse was chosen for the design of the exterior of the house. Local stone, blasted from the site, was used for the terraces, walls, steps and foundations, above which is rough-finished stucco on tile. The trim is cypress and oak, stained brown, enframing the windows and doors and forming a fascia along their cornices. The oak trim of the entrance door is carved, and the roofs are covered with slates.

Rough Plaster and Exposed Ceiling Beams Are Used in the Living Room



STEPS FROM LIVING ROOM TO ENTRANCE HALL



FIREPLACE CORNER IN STUDY

HOUSE OF DUDLEY N. HARTT, ESQ., CHESTNUT HILL, MASS.
RICHARDSON, BAROTT & RICHARDSON, ARCHITECTS

The Smaller Civil Architecture of England

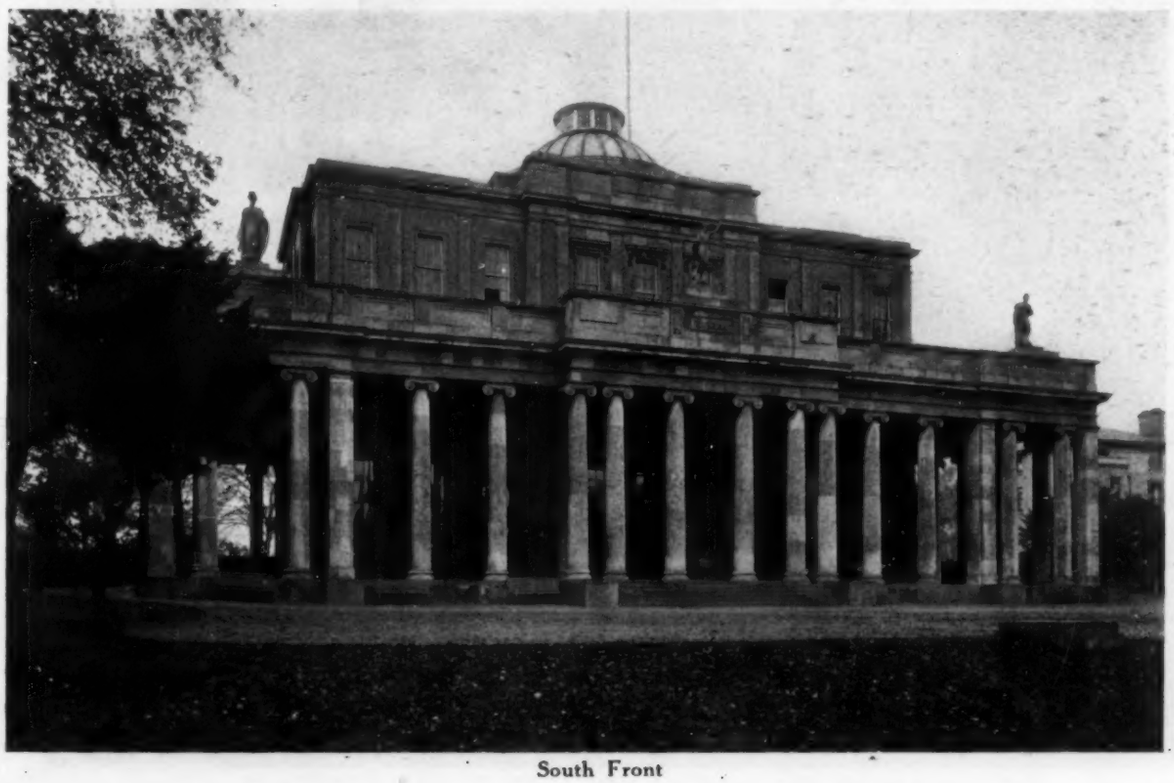
PART IV. THE PITTVILLE PUMP ROOM, CHELTENHAM, GLOUCESTERSHIRE

By ROGER WEARNE RAMSDELL AND HAROLD DONALDSON EBERLEIN

ON May 4, 1825, the cornerstone of the Pittville Pump Room, in the northern outskirts of Cheltenham, was laid with all the panoply of Masonic ritual in the presence of a large gathering of notabilities who had come thither in procession after a service and sermon in the parish church. Coins and diverse other articles were placed in the cavity of the stone, which was then closed with a silver plate whereon was a long inscription recording, among other facts, that the architect was John Forbes of Cheltenham. At the conclusion of the ceremonies there was enthusiastic cheering, and the band played "God Save the King." A decorous beginning, indeed, for a very decorous building! We further discover from the old records that "the building occupied five years in its erection. It was completed in 1830, and opened July 20, by a public breakfast, attended by the leading families of the county." Let the imagination picture the clothes worn by the belles and beaux of the day, the raiment of the dowagers and squires, gaily colored vehicles in which they arrived, the bright hued liveries of the coachmen and footmen, the serenity of well groomed rural surroundings, the urbanely plotted and planted park about the Pump Room, and you have a vivid picture of the occasion!

Though not couched in quite the terms we should now employ for an accurate architectural description, a contemporary account of the building, written for the general public, is so redolent of Regency atmosphere—George IV had been king in his own right only a few years when the writer described the projected building from the architect's drawings—that it would be a pity not to give it in part:

> Pittville Pump-room is of a style purely Grecian, varied and embellished by the taste and genius of the architect. The Ionic order has been selected for decoration; and the subject chosen for imitation is the temple on the Ilissus, at Athens. The body of the building, which is 90 feet in length, and 43 in breadth, is surrounded by a splendid colonnade of 20 feet wide, the roof supported by fluted columns of 22 feet in length, and with capitals richly ornamented. In the middle of this roof, and over the principal entrance, stands the figure of Hygeia; and the two wings ornamented with the statues of Aesculapius and Hippocrates, respectively, have a very fine effect. The main building bears an elegant superstructure of corresponding character and ornament, consisting of a room at each end, presenting externally three windows in each, the intermediate space being faced with ornaments and pilasters. Over the centre of the building appears an elegant dome, well raised to the height of 70 feet, around which and enclosed by neat iron work, is a gallery. . . . The staircase, leading to the upper room, and also to the gallery, ascends from a vestibule at the back of the building, the entrance to which is from the northwest end of the colonnade. The style and arrangement of this magnificent design differ from the exterior only as it surpasses it in variety of embellishment, and richness of decoration, so as, at least, to equal any expectation which a survey of its bold and splendid exterior may inspire. On each side of the principal entrance there are two columns and pilasters (separated by large windows of 11 feet in height) corresponding with four others on the opposite side of the room, the intercolumniations of which are open; behind these are three windows of richly stained glass, in front of which

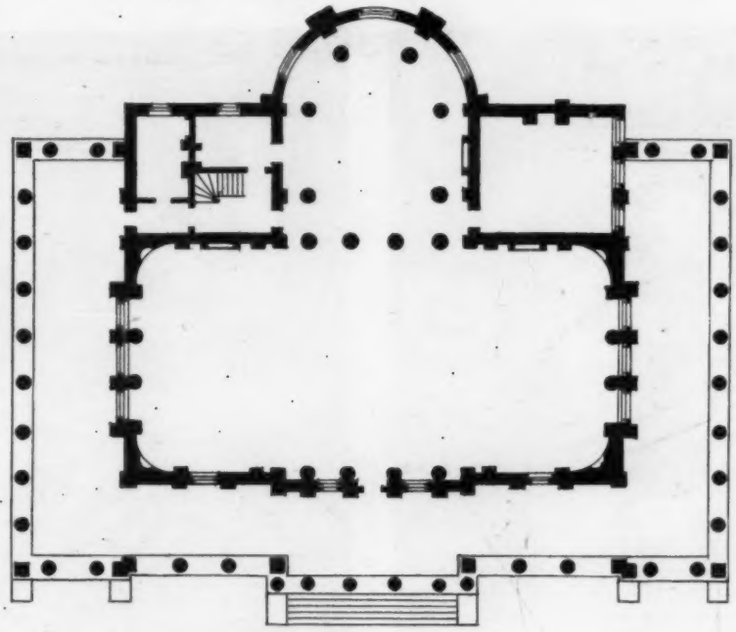


South Front

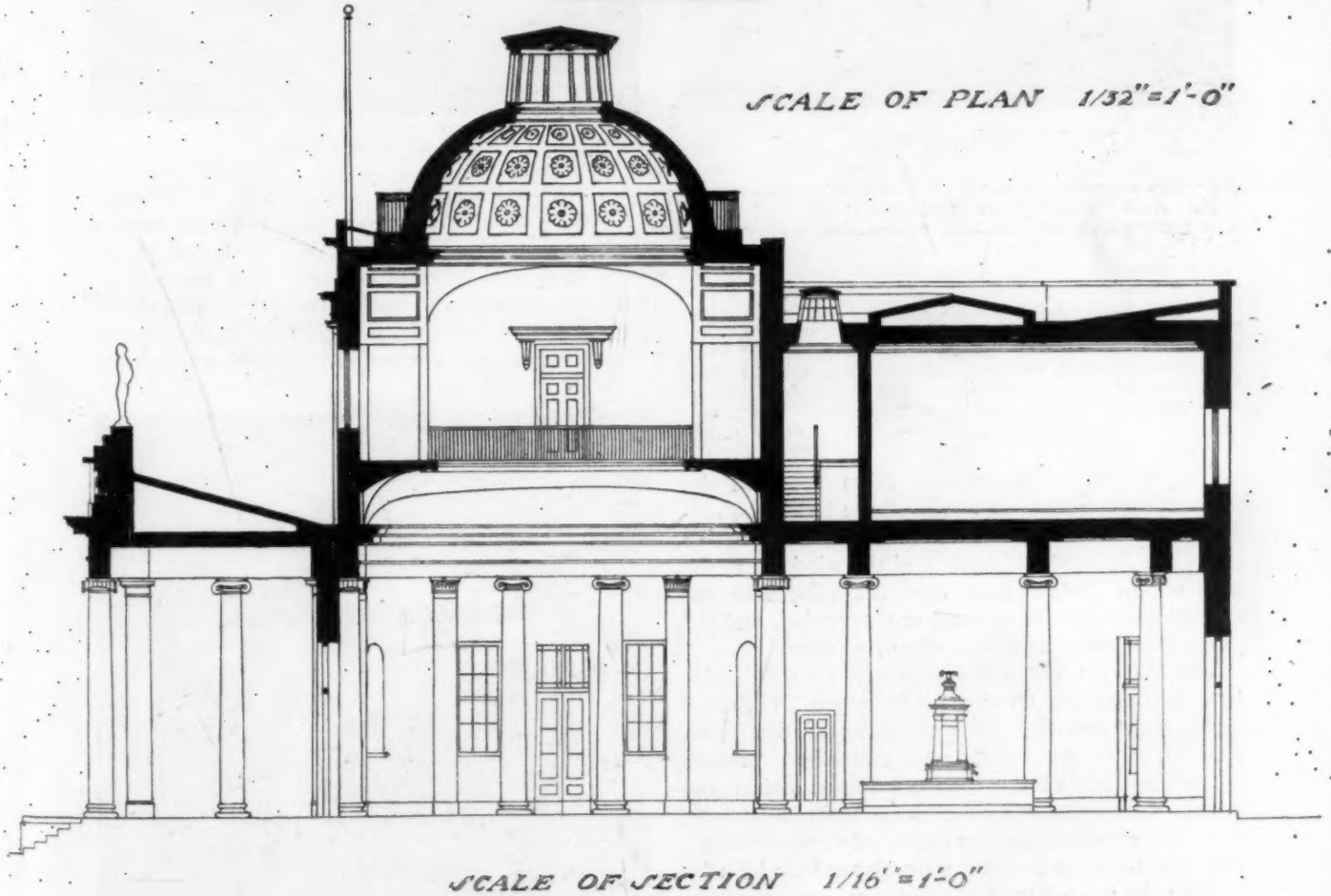
THE GREAT PUMP ROOM

THE WEST PORTICO

PITTVILLE PUMP ROOM, CHELTENHAM, GLOUCESTERSHIRE



SCALE OF PLAN 1/32"=1'-0"

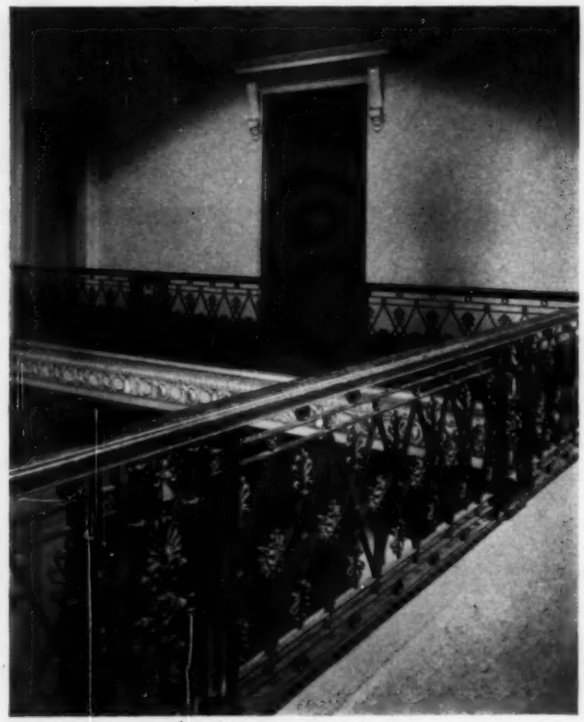


SCALE OF SECTION 1/16"=1'-0"

PITTVILLE PVMP ROOM

CHELTENHAM GLOS.

The Pump Head



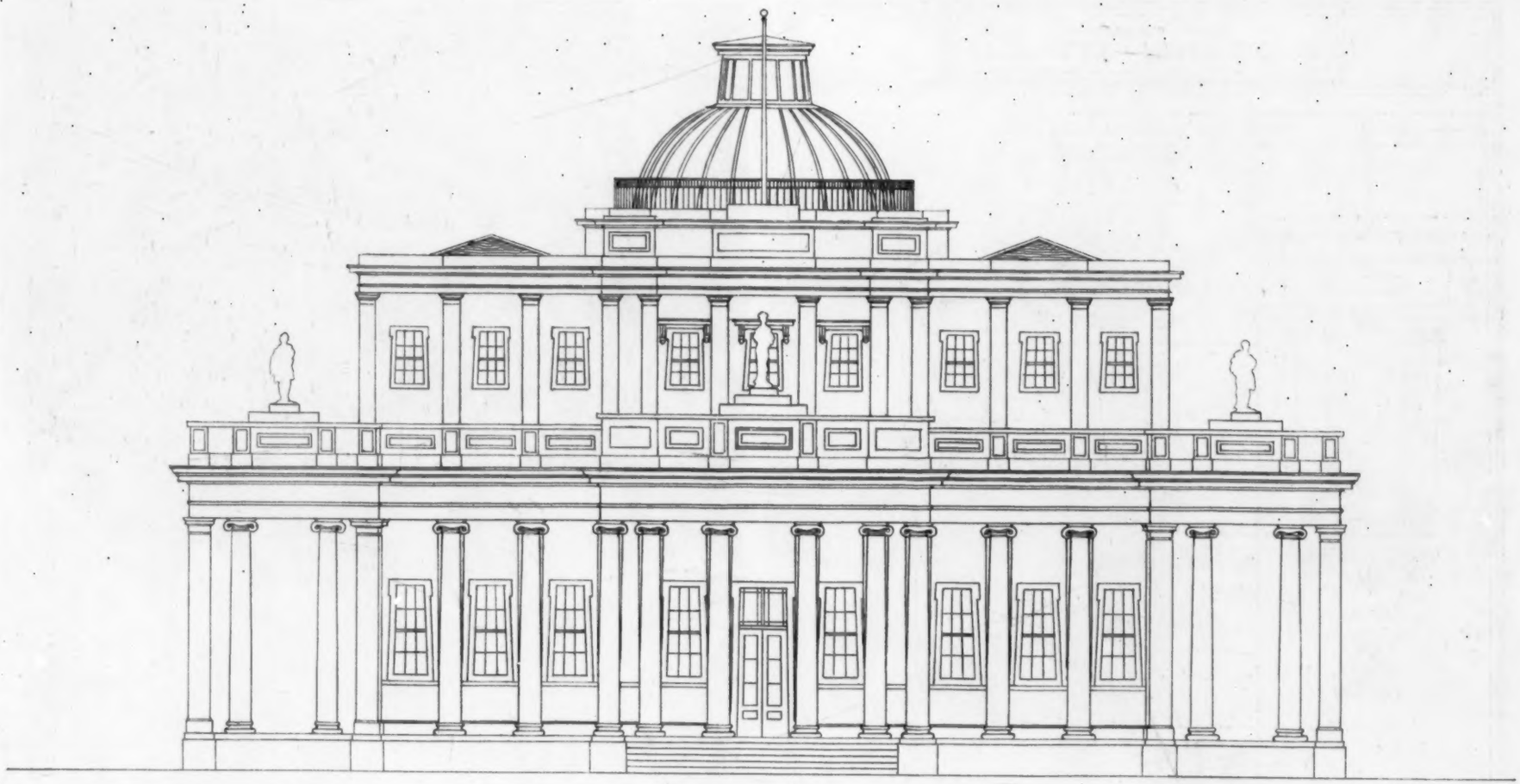
Detail of Balustrade

the pump appears, decorated by a marble tripod, after a model from "Rocchigiani's Monumenti Antichi." . . . The walls within are spacious, ornamented with columns and pilasters, well relieved by niches and recesses, breaking in pleasing outlines. The ceiling at each end of the room is arched with a fine, flat sweep and ornamented with bands and double sunk pannels, enriched with foliage, the centre of the building being a square space, opening to the dome. This space, well lighted from behind and in front, by windows beneath the dome, the interior of which springs with enriched sunk spandrils and segmental soffites, finishes with tapering pannels, and with appropriate decorations; the top of the dome being completed by a richly stained skylight.

This premature description from proposed designs, though in the main true of the finished building, noted some intentions that were never carried out. The lights in the dome and the windows at the back of the ground floor were not filled with the colored glass sometimes used at this period, and the pump head was not in the form of a tripod.

The Pittville Pump Room stands on the border land between the Græco-Roman phase of British architecture and the full blossoming of the Greek Revival, when archæology pure and simple marked the last episode of the Classic tradition before the debacle of Victorian incoherence. Built, as it was, when the sophistication and scholarly refinement of the Græco-Roman impulse were giving way little by little to the more purely archæological interpretation of Greek precedent, and at the same time to a certain heavy handed emphasis that had its origin in the note of military pomp and imperial assertiveness injected into Classic expression at the time of the First Empire in France, it nevertheless possesses an exquisite delicacy that would have been impossible of achievement a few years later. It was a forerunner of the Greek dominance without any of the grim coarseness so often imparted to it. Forbes, a virtually unknown architect, had evidently been a close student of Sir John Soane's work and of the work of other illustrious architects who had not yet delivered themselves, body and soul, to the thralldom of Greek exactitudes dished up with Imperial French sauce, and Forbes had profited much by it.

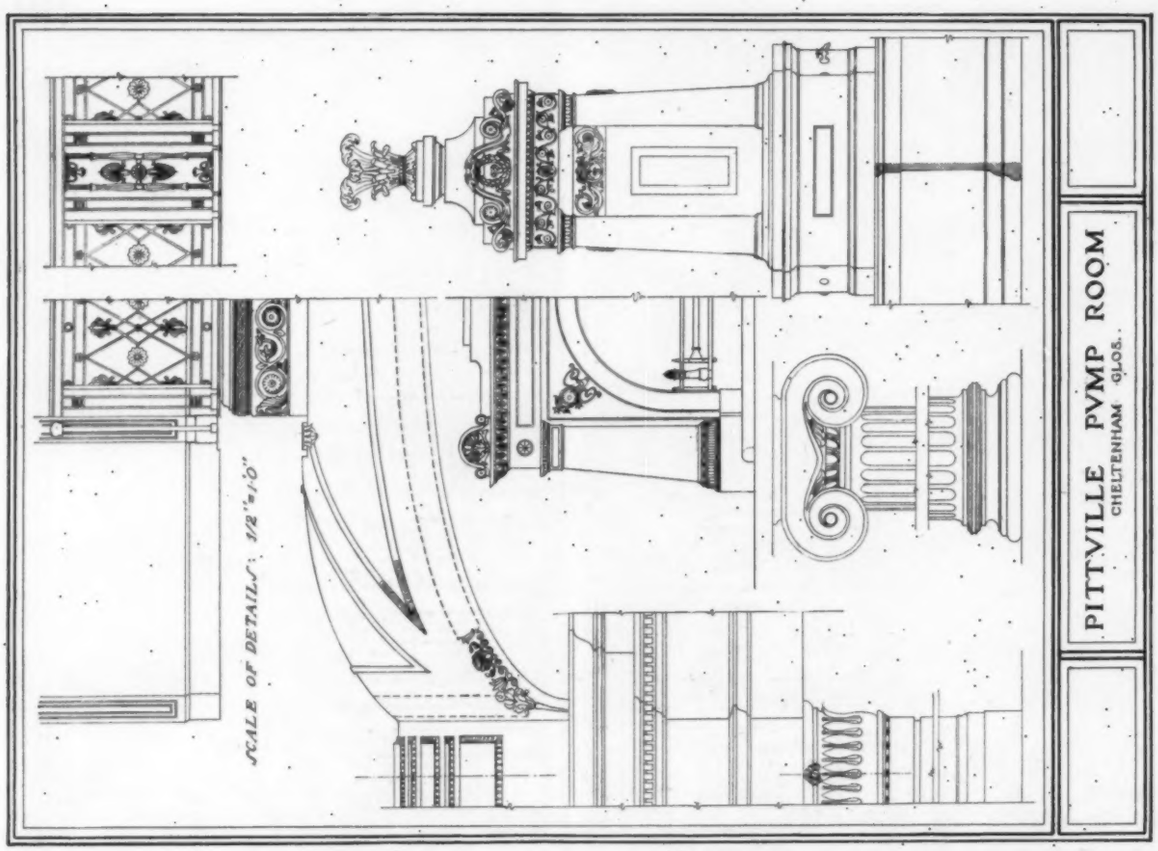
Fireplace in the Pump Room



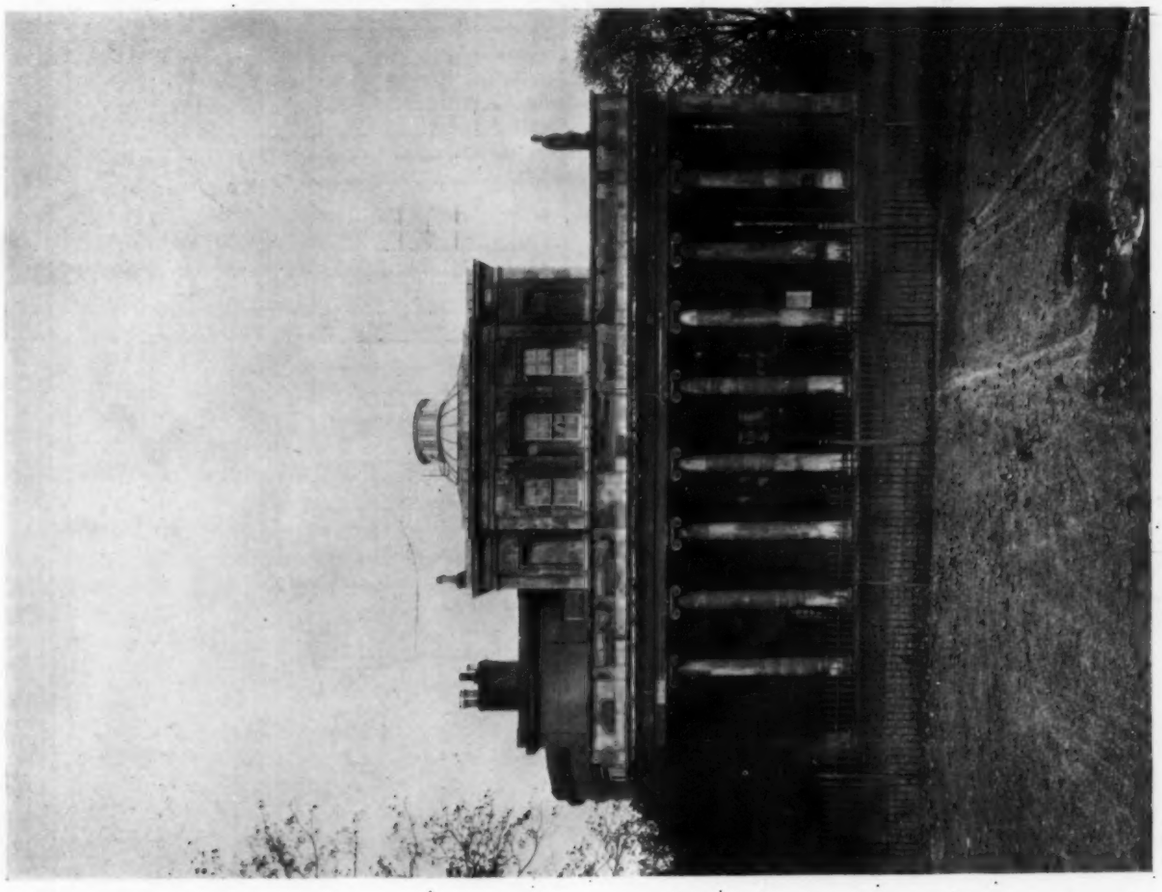
SCALE 1/16" = 1'-0"

PITTVILLE PUMP ROOM

CHELTENHAM GLOS.



DETAILS



WEST ELEVATION

PITTVILLE PUMP ROOM, CHELTENHAM, GLOUCESTERSHIRE

The Forum Studies of European Precedents

STREET FACADES IN DIJON

PART I

Louis XV Wing, Hotel de Ville, Dijon

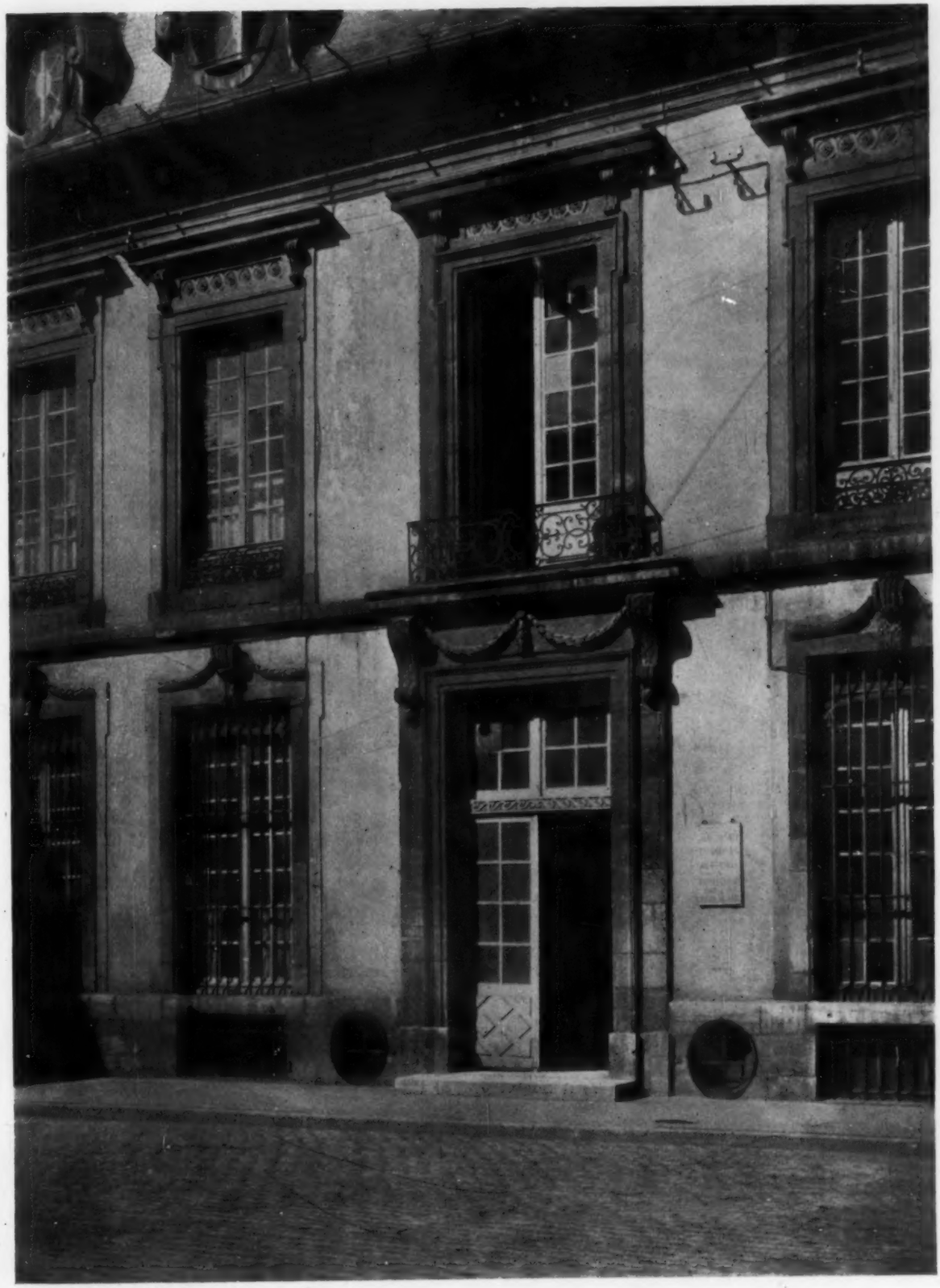
IN Dijon, Toulouse, and other important provincial towns of France there are to be found countless interesting examples of early French Renaissance architecture. In Dijon, particularly, there are many houses in this style, showing unusual freedom and individuality in design and great elaboration and exuberance in the use of architectural decoration. This is probably due to the fact that Dijon is sufficiently far from Paris not to be greatly influenced by the trend of its artistic and architectural development. "Indeed," writes Sir Reginald Blomfield in his History of French Architecture, "throughout the sixteenth century, and well into the seventeenth, the two currents of artistic thought, that of Paris and the northwest on the one hand, and that of Dijon and the southeast on the other, kept quite apart and have to be studied independently."

The street facades of the houses of Dijon show a regard for, and an understanding of, balanced and symmetrical design. The fenestration is carefully grouped and studiously proportioned in regard to the wall spaces, after which the imagination of their designers, such as Hugues Sambin, ran riot in the most lavish and extravagant use of rich and florid carved decoration on the facades of many of the houses. The character of this ornamentation is more Spanish than Italian, although not used as sparingly or as appropriately as was the case in Spain. Swags of fruit and flowers, grotesque and conventionalized heads and masks, urns, broken pediments, cartouches, caryatid figures, wall niches and statues of every description were used to conceal the plain wall surfaces, and to adorn the window and door openings and the dormers of the steep roofed houses.

The illustrations of Dijon street facades shown in this group of Forum Studies exhibit, on the whole, considerable restraint and dignity in the use of architectural decoration. With the exception of the Louis XV wing of the Hotel de Ville, all of these houses were built in the early part of the seventeenth century. The date ascribed to the Hotel de Vogue is 1614, but the wing, an illustration of which is shown on Plate 37, is considered to be of later date.

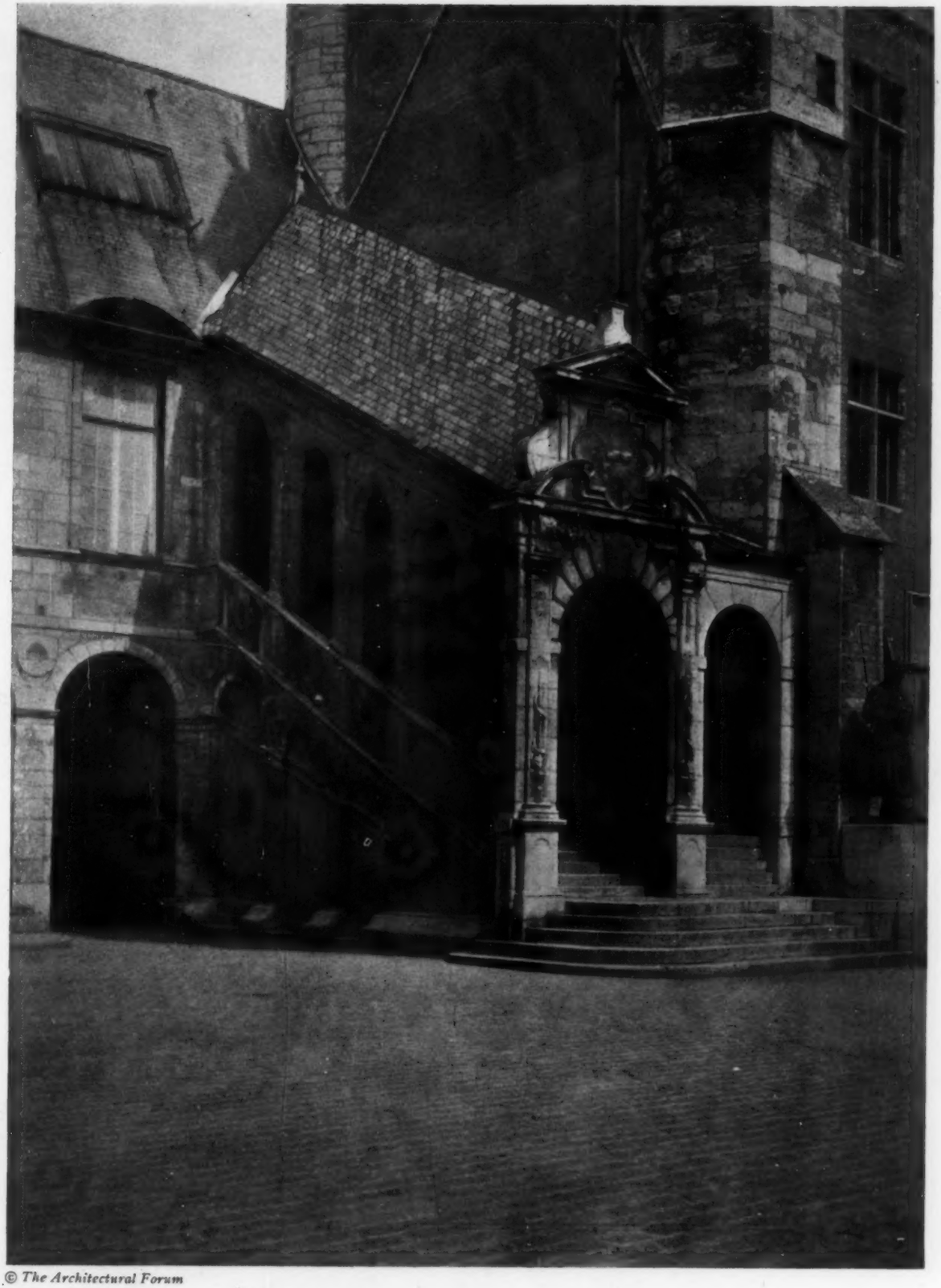
DOORWAY IN COURT, HOTEL DE VILLE, DIJON

The Forum Studies of European Precedents; Plate 34



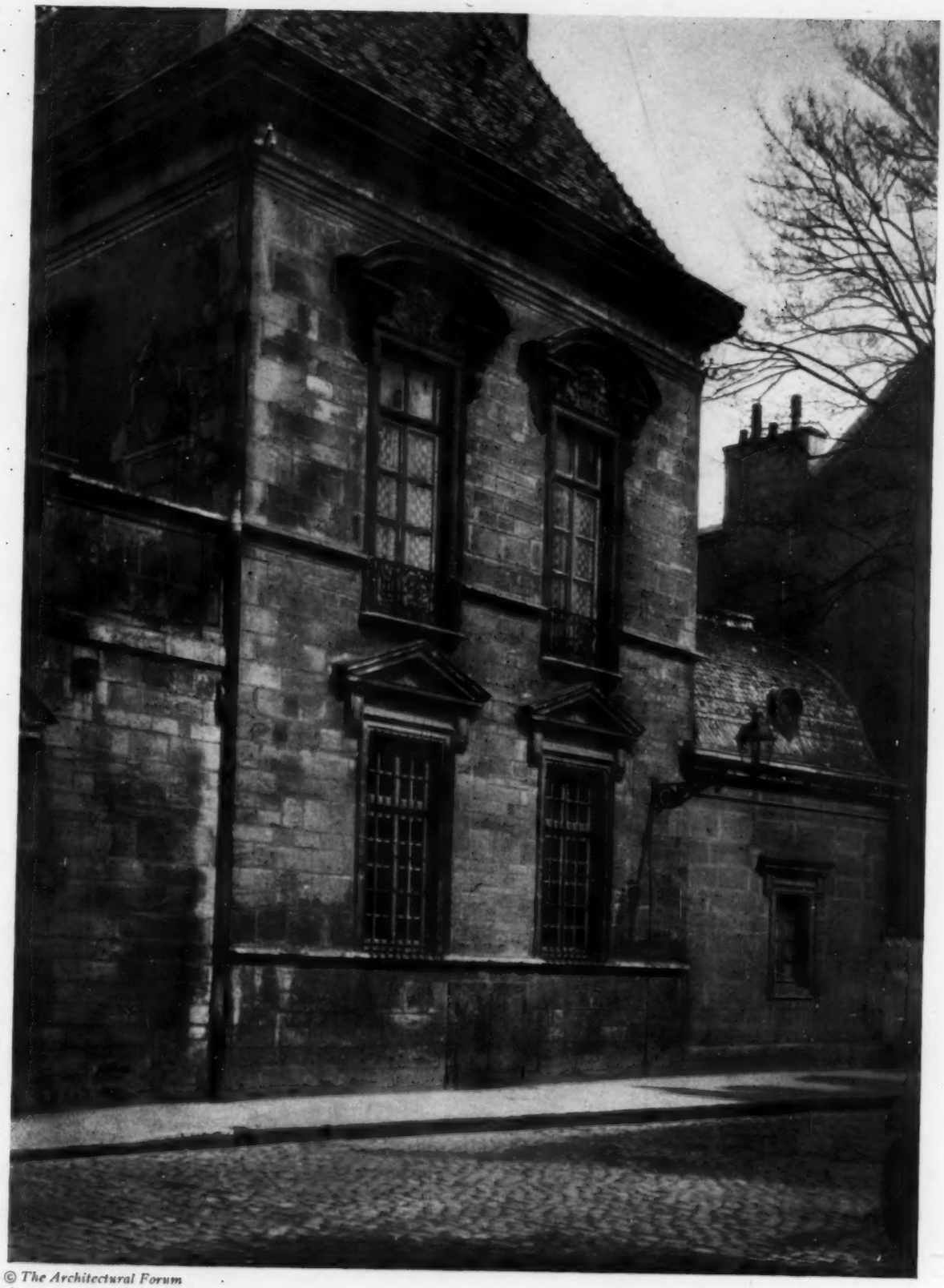
DETAIL, COURT FACADE, HOTEL DE VILLE, DIJON

The Forum Studies of European Precedents; Plate 35



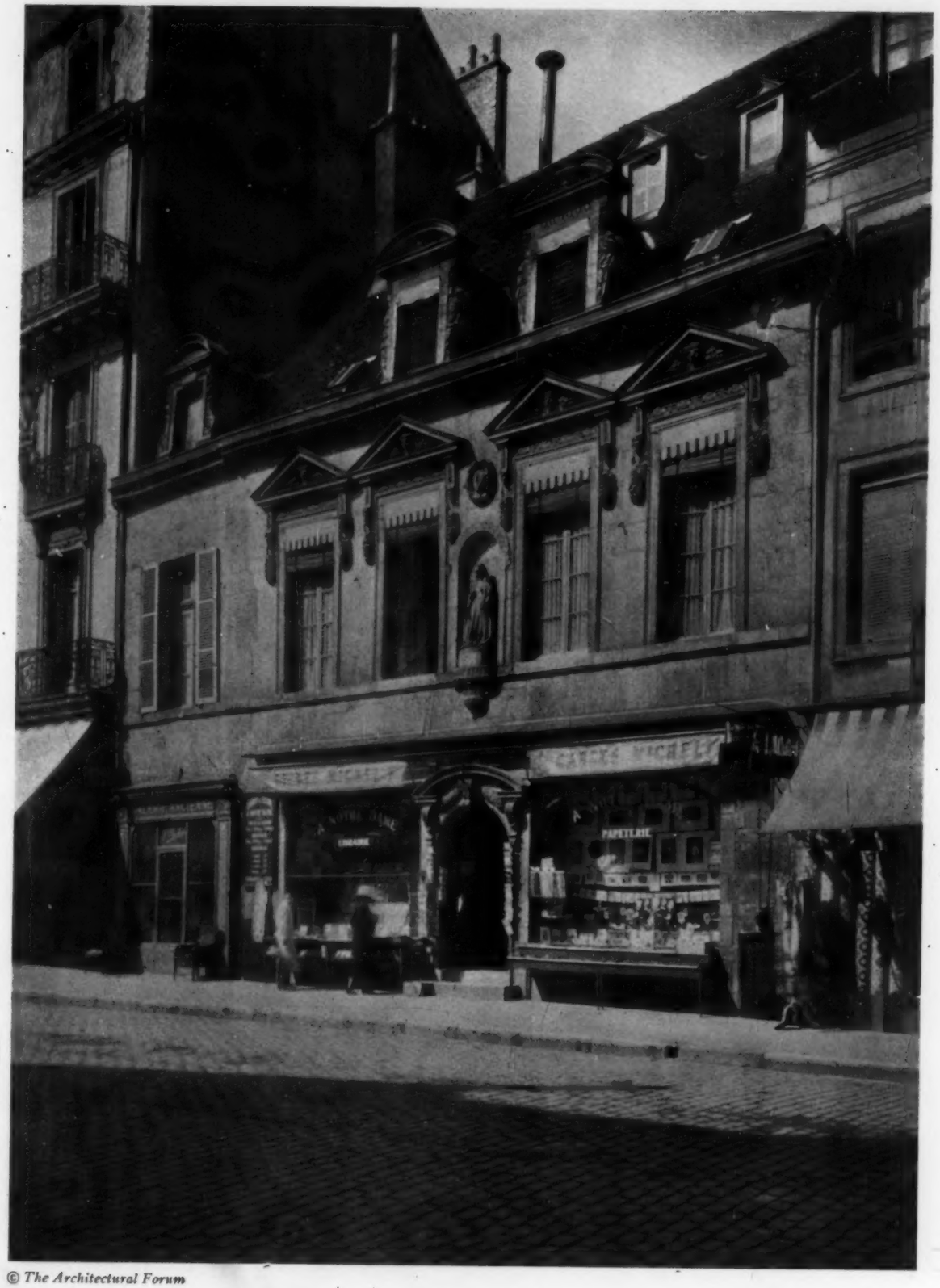
STAIRCASE, MUSEE, HOTEL DE VILLE, DIJON

The Forum Studies of European Precedents; Plate 36



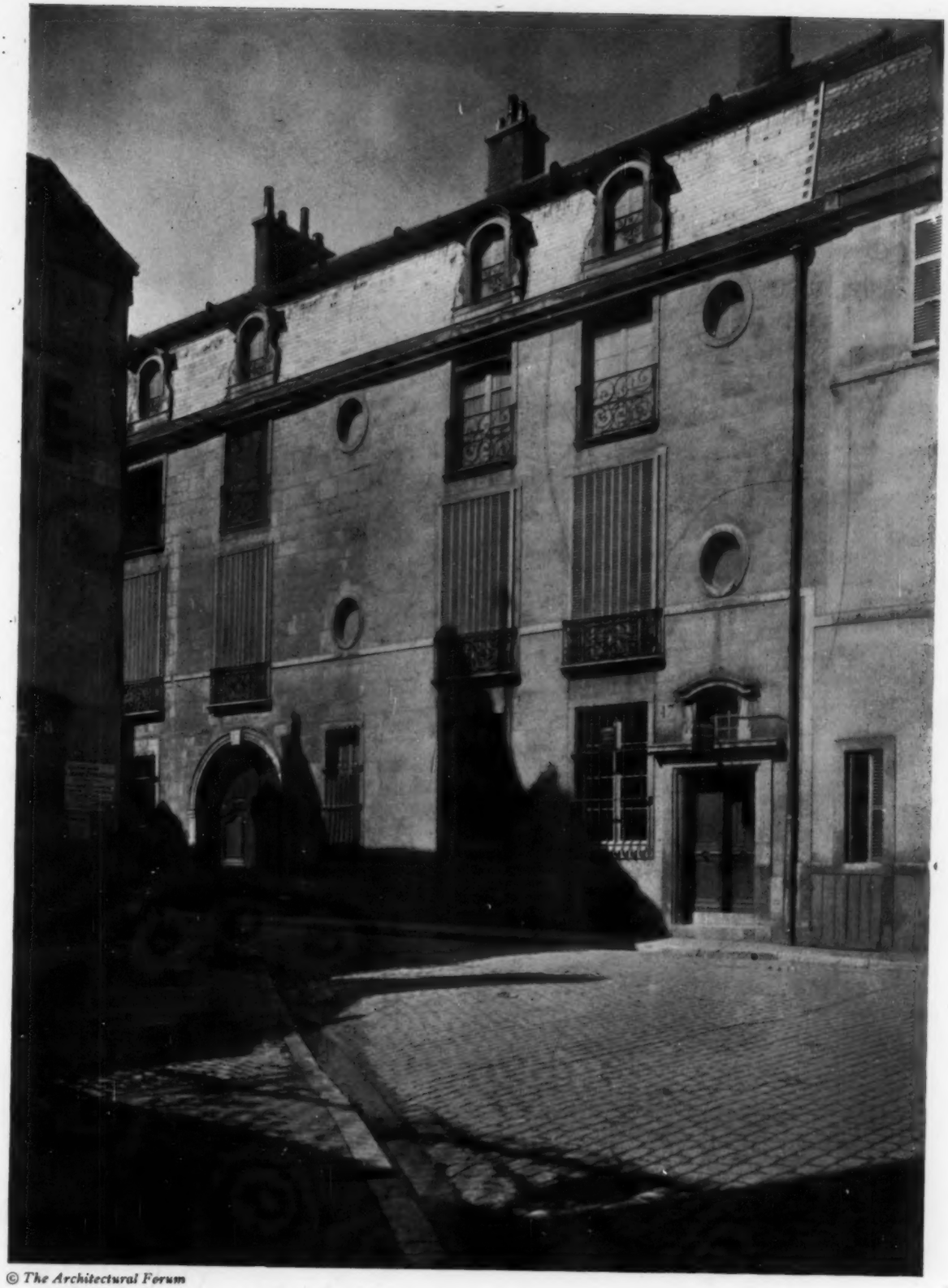
DETAIL OF WING, HOTEL DE VOGUE, DIJON

The Forum Studies of European Precedents; Plate 37



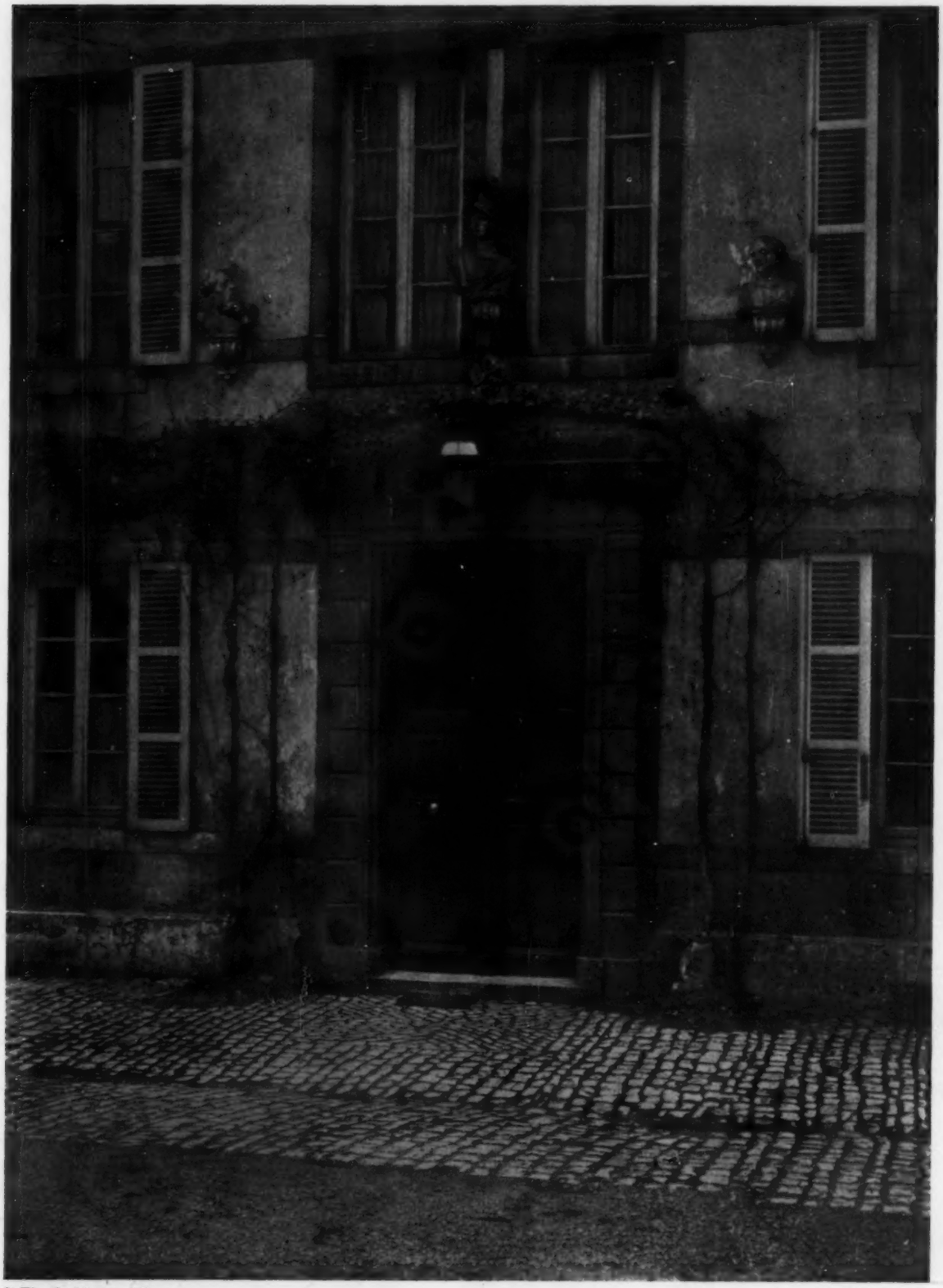
OLD HOUSE OPPOSITE CHURCH OF NOTRE DAME, DIJON

The Forum Studies of European Precedents; Plate 38



DETAIL OF WING, HOTEL DE VOGUE, DIJON

The Forum Studies of European Precedents; Plate 39



COURT ENTRANCE, NO. 37 RUE VERRENE, DIJON

The Forum Studies of European Precedents; Plate 40

SMALL BUILDINGS

On the Designing of Small Libraries

By CHALMERS HADLEY

THE same general principle should be followed in the designing of small as in the designing of large library buildings. The chief difference in the problem lies in the number of people to be served and the number of books to be housed. The problem should be studied under two general heads,—location and plan, the latter dependent upon the former, since the plan of the building must be adapted to the shape of the lot upon which it stands.

Library of the American International College, Springfield, Mass.
Kirkham & Parlett, Architects

To consider location first, experience has proved that it is far better to pay for a good library site than to accept a poor location as a gift. A library building should be placed at a strategic point in a town, a location which will meet the needs of the largest number of people. Too much cannot be said against selecting a library site on which the building will simply look well, or where it will only add to the appearance of the locality. Service to the public and good appearance of the building can usually be successfully combined; if they cannot, appearance should be sacrificed to service. A location at a street intersection will give additional prominence and publicity to a library,—with resulting noise and dust in the building itself. A site with a pronounced slope at the rear or side will permit an outside entrance to a possible basement lecture room without descending stairs. It will also decrease the underground appearance of the basement rooms facing the slope. In shape a building should be square, oblong, or with angles,—depending, of course, upon the shape of the building site or the amount of space available for the structure. Usually the best shape of plot for library planning is the oblong with the longer side of the building and the entrance facing the street. Such a location will insure there being more air and natural light in the library, especially if it is located between other buildings. The architectural appearance is usually better if the building's longer side faces the street. If the shape of the site is long and narrow, the shortest side or end of the building will have to face the street, and a different interior layout of the plan will be necessary. Realizing the value of front space in a library building, it will be seen that in a small structure particularly there is frequently waste of valuable space in the locating of stairs, vestibules, coat room, toilets, etc., at the front of the first floor, near the entrance.

Now to consider the question of the design, which, once the location is selected, becomes the all-important problem for the architect and the library committee. The design problem divides itself into two parts,—the exterior elevation and the interior plan. First let us briefly discuss the exterior elevation, which determines the architectural character and style of the building. It is noticeable that there has been within recent years a decided departure from the use of the monumental type of architecture for library buildings, a type which, as a matter of fact, should never have been considered for small structures, for which it is not suitable.

The design of the exterior of a library should be appropriate to its environment and to its geographical location. A building in the Spanish style with plaster decorations would hardly agree with the local traditions or meet the climatic conditions of a New England village. Local building materials and local architectural traditions largely determine the style to be followed. No matter what style of architecture is selected for the exterior design of the building, there should be provision of windows of sufficient sizes and heights from the floor to properly light the interior. Good taste and proper appreciation of scale and proportion in the exterior design will produce a satisfactory result, no matter what may be the style or the materials which must be employed.

Before considering details essential to a successful library plan, there are 11 basic principles, laid down several years ago, by a committee of the American Library Association, which are well worth mentioning here, since they are of real importance:

1. Every library building should be planned for

Bellport Memorial Library, Bellport, N. Y.
Aymar Embury, II, Architect

the kind of work to be done and the community to be served, no two sets of conditions being alike.

2. The interior arrangement should be planned before the exterior is considered.

3. Plans should provide for future growth and development, with increased use and more funds.

4. A library should be carefully planned for economical administration and efficient management.

5. Public rooms should be planned for complete supervision by the fewest possible attendants.

6. No convenience of arrangement should be sacrificed for architectural effect or for appearance in any form.

7. There should be no decoration of reading rooms or working rooms which attracts sightseers to disturb readers and attendants by constant inspection.

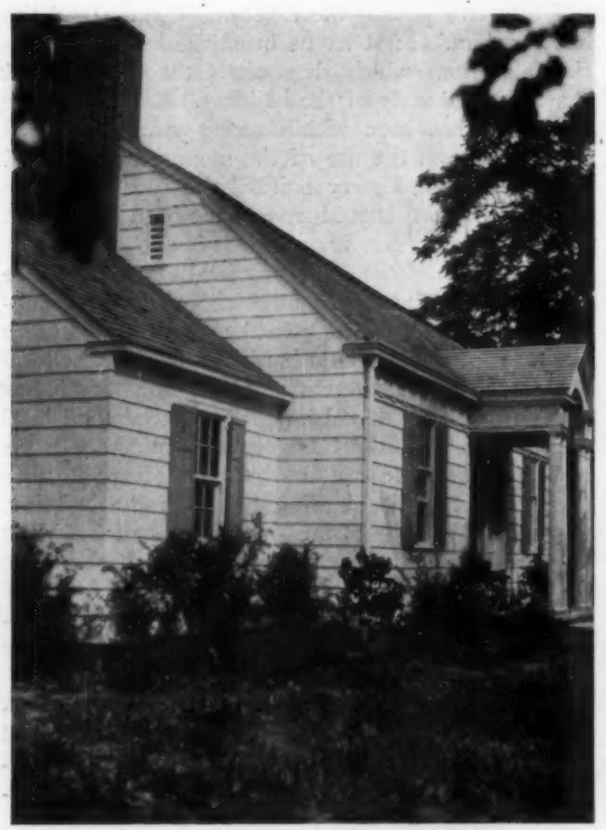
8. There should be good, natural light in all parts of the building. Windows should extend to the ceiling to light the upper portions of every room. In a book room or stack, windows should be opposite the ends of the aisles.

9. No shelf should be placed so high as to be out of reach of a person of medium height, standing on the floor.

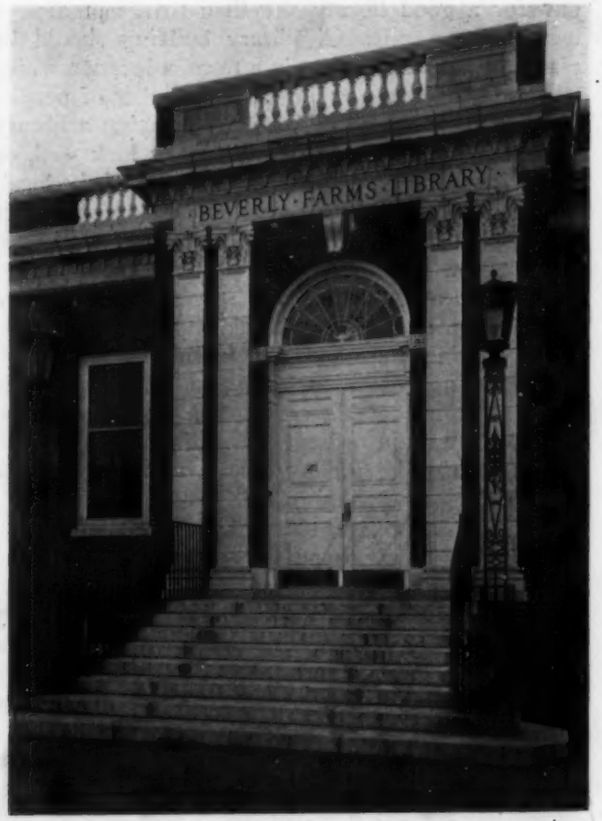
10. Flights of stairs should be straight and not circular.

11. Communication by telephone or speaking tube should be arranged between the working rooms to facilitate operating.

With these principles in mind, the requirements of a small library should be carefully studied. There must be a delivery or librarian's desk centrally located, usually opposite the entrance door. Spaces set apart for adults' and children's reading rooms must always be included. If the size of the building permits, a small room with toilet attached should be planned for the exclusive use of the librarian. A small trustees' or conference room is always con-



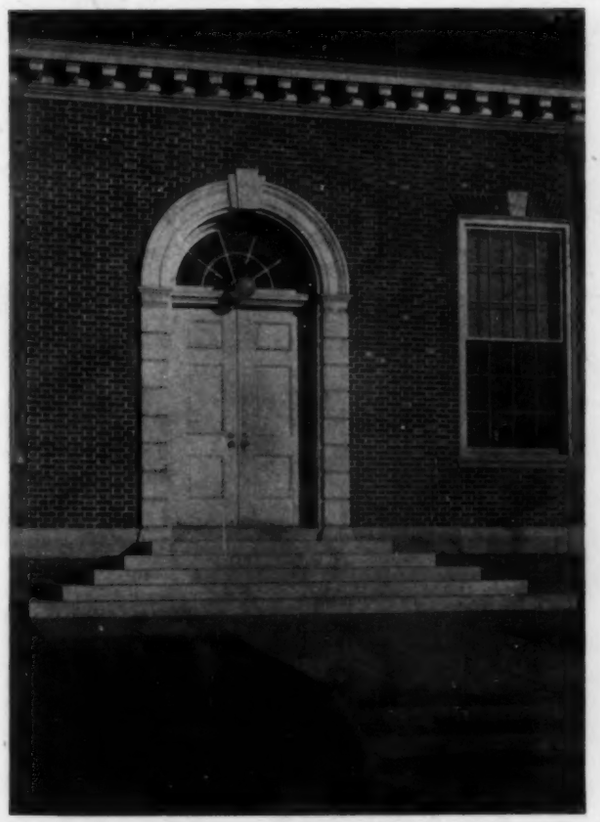
Detail, Bellport Memorial Library, Bellport, N. Y.
Aymar Embury, II, Architect



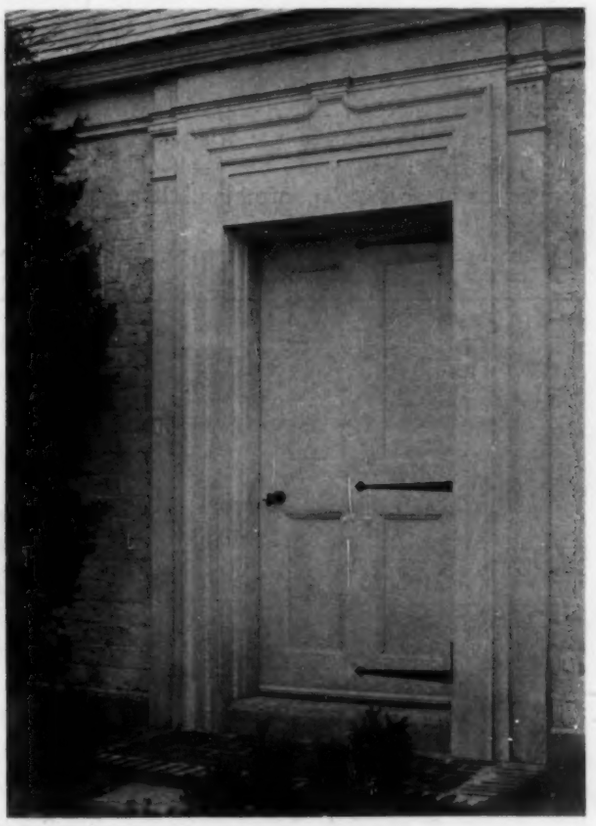
Detail, Beverly Farms Library, Beverly Farms, Mass.
Charles G. Loring and Joseph D. Leland, Architects

venient. A coat room and toilets for public use must be accessible. Small libraries seldom have space to spare for the introduction of reference and periodical rooms, but if possible, it is wise to make such provision. A work or repair room as well as a receiving and shipping room should be included, preferably in the basement. It is often possible, in a small library, to combine these two rooms into one. Provision should also be made at the rear of the main floor for a future stack room to allow for the probable increase in the number of books. In many small library buildings the basement plans include lecture halls, capable of seating from 100 to 150 people. Such a hall, which is a great convenience to a rural community, can be used to advantage both socially and educationally. A hall of this kind must be provided with adequate and direct exits, and with coat room and toilet facilities. It is often possible to have these conveniences so located that they will answer not only for the public using the library itself but also for the people attending lectures and social affairs in the basement hall. The basement plan must further include a boiler and coal room. Often it is advisable to provide a small kitchen and a storeroom. The latter room might well be combined with the receiving and work room, if this is located in the basement. The possibility of locating a lecture hall in the basement of a small library building depends not only upon the possible local need for such a hall but also upon the topography of the site of the building. If the land does not fall away sufficiently at the rear or side of the building to allow good sized windows in the basement lecture hall, it will be necessary to have this room lighted and ventilated by windows opening

Walter Hines Page Library, Huntington, N. Y.
Charles G. Loring, Architect



Detail, Memorial Library, Bound Brook, N. J.
Jardine, Hill & Murdock, Architects



Detail, Walter Hines Page Library, Huntington, N. Y.
Charles G. Loring, Architect

into deep areas. This arrangement is always unsatisfactory and in addition is generally unsightly.

The simpler the plan of the small library, the better. Experience has shown that one large room occupying the entire floor space of the building is the most economical and most practical, both as regards supervision and public use. Structural partitions in this main room should be omitted as far as possible. Areas of space on this floor, such as the children's room, the adults' reading room and the delivery room, can be much better provided for by outlining these rooms with double-faced floor bookcases than with partitions. Walls and permanent partitions are expensive, inflexible, and shut out the light. It may be necessary, however, to enclose the librarian's room and the work room, if these are located on the main floor, in order to give these rooms proper privacy and necessary seclusion during the library's working hours.

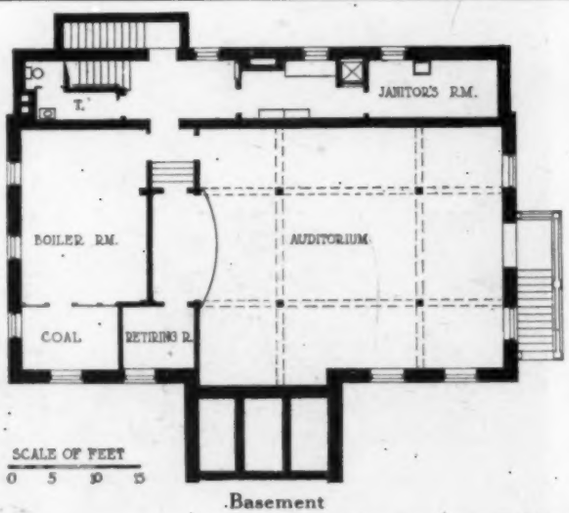
Carnegie Public Libarry, Perry, N. Y.
Beverly S. King, Architect

The most common and expensive mistake in planning library buildings is to underestimate a library's growth and the future needs of an increasing number of readers and books as the library develops.

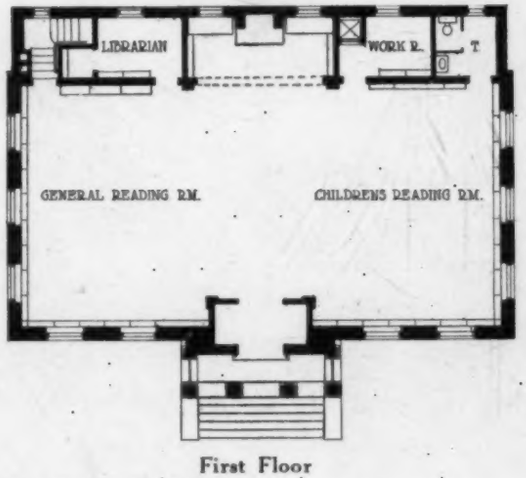
If the work and number of books in a library grow beyond the library's capacity to handle them, it will become necessary to add to the building. The usual way to increase a building's space is to add a stack room to the rear of the original library building. This room will house the book collection in a compact and accessible form, and leave the floor space of the original building free for public use.

Once the plan is determined upon, there still remains the subject of equipment. This includes proper lighting and ventilating, heating, floor covering, interior finish, and the possible necessity of installing a book lift from the receiving and work room in the basement to the librarian's room on the main floor. On each one of these subjects a separate article might well be written. Suffice it to say that high windows are increasingly favored in library buildings, as they permit an unbroken stretch of wall shelving below them, thus increasing the book capacity. Direct lighting by means of shaded table lights is preferable to any type of indirect ceiling light. The general artificial lighting of the rooms themselves may be secured through suspended ceiling lights, or by wall brackets, located at regular intervals high up on the walls of the room between the windows. Public toilet rooms for both men and women, located well apart, are a necessary nuisance. It is better, if possible, to place them in the basement than on the main floor. Top floors made of composition materials are often used, as uncovered wooden floors are cold and noisy and likely to be uncomfortable in winter.

In small libraries it is seldom necessary to go to the expense of installing artificial ventilation. If the single large room of the library is surrounded by windows on all sides, the question of ventilation is not serious. The method of heating may be determined very largely by the preferences of the building committee. After all, the most important features of a successful library plan are the simplicity and practicability of its interior arrangement.



Basement



First Floor

The Carnegie Public Library, Perry, N. Y.
Beverly S. King, Architect

Library Shelving and Interiors

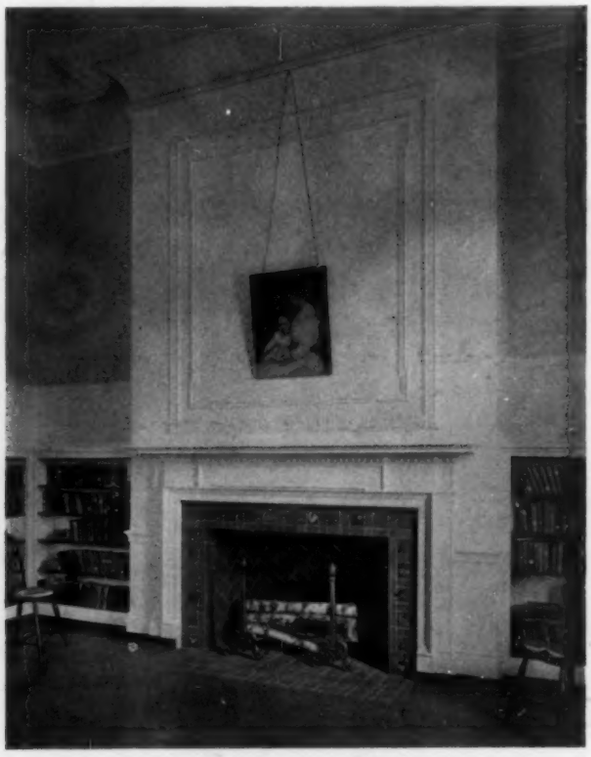
By JOHN ADAMS LOWE
Assistant Librarian, Brooklyn Public Library

FORWARD-LOOKING architects and practical building committees are making superb strides in plans of buildings for small public libraries, and perhaps at no other point in the planning is the appreciation of what the modern public library is and what it will be tomorrow more clearly shown than in the housing of the books. It is true that new buildings are still being erected according to plans which carry on the old tradition and which represent the understanding of a library 25 or 50 years ago; then the small public library was considered to a greater or less extent a place in which books should be stored. An architect, therefore, who could make the best provision for the largest number of books in the space available was deemed most successful. Little else seemed to be important.

An arrangement unique in my experience, although it may have been duplicated many times, exists in a small library of which I know. When it was discovered that all the books could not be accommodated on the shelves of the reading room in this library, although they extended from the floor to the ceiling and covered every inch of space not occupied by doors and windows, the ceiling was removed and the shelving run straight up the walls into the space above. The shelving must be all of 14 feet high. To be sure ladders of generous length and weight are always at hand, but most of the borrowers are women, who in spite of wishing to be considered modern, still object to moving the ladders and mounting them for any book. The result is that the books at the top of the room dry out or disintegrate into their elemental dust, unmolested;—nevertheless, shelves have been provided for all the books. To my mind another and more common solution of getting the books into space, irrespective of their use, is not one whit less ridiculous. This is that absurd method of filling the space with an iron stack. This stores books successfully; the stack has legitimate uses, but never in a small library building housing less than 10,000 volumes. Its place is in a large library, where great numbers of books are to be compactly stored, and indeed in what is perhaps the most interestingly planned building recently erected, the Cleveland Public Library, there is no great general stack room, the books being grouped according to the subject division in which they are to be used, a practical and convenient arrangement.

Avidity for utilizing space for books is manifest in shelving them over heat radiators without heat ducts back of the cases; in covering the front of the loan desk with shelving, at just the most congested point in the entire library at certain times of the day; in using the backs of settles for book shelves,

Detail, Walter Hines Page Library,
Huntington, N. Y.
Charles G. Loring, Architect



Detail, Children's Reading Room, Public Library,
Needham, Mass.
Ritchie, Parsons & Taylor, Architects

Library of the American International College, Springfield, Mass.
Kirkham & Parlett, Architects

and even crowding every inch of space over a fireplace mantel. Truly, it would seem as if the only thing which had been considered in some buildings had been the crowding in and compactly storing of all the books that could be gotten in. Today the small public library, properly administered and maintained, is a vital educational and social welfare force in the community, with a thousand interests and appeals, and it is far from being merely a storehouse for books. On this account only, can he who plans his building to meet as many of the functions of the small public library as possible hope to erect a structure which will be adequate and satisfactory in the service of the future, with all its demands.

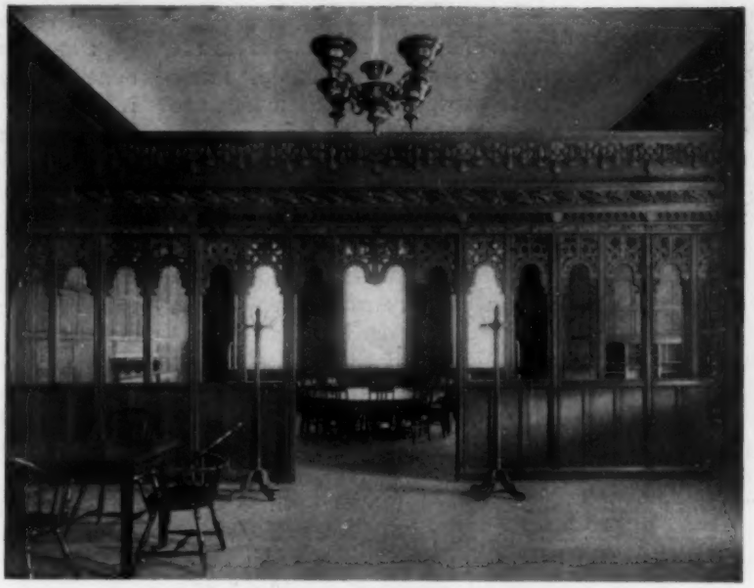
Quiet is a factor which every library used to emphasize. I recall a library building designed like an Egyptian tomb. When the visitor pushed in the massive door he found himself thrust into what was practically the very pedestal of a piece of sculpture of a boy whose raised index finger was pressed across his lips, and beneath a legend, "Silence." It was effectively operative. The place was always practically deserted. The abnormal silence of the early 90's in libraries has gone. They are quiet places today, but the desire to make books of use to readers necessitates consultation, and we have places of varying degrees of quiet. The shelving of books has a very definite bearing on this problem. Quiet is observed simply for the convenience of readers. The business of books and their handling must contribute to it. If books can be so divided and shelved that they may be used independently by the various groups of readers, would it not seem feasible that each group should be most efficiently served? A considerable part of the day's work is devoted to supplying books to borrowers who wish to take them home for reading. These patrons ask little more than accessibility and convenience in making their selection. It is the almost universal practice to place all books on shelves entirely open to the public. However, if the shelves run around the walls of the reading and reference study rooms, the noise and confusion of borrowers is extended beyond the loan desk to the reading room. Certain it is that provision made near the loan desk of shelves for books of special collections likely to be required for home use, or for duplicate pay collections, centers much of the lending process there.

Library of the American International College, Springfield, Mass.
Kirkham & Parlett, Architects

On the other hand, another group of books needs to be shelved together in a place free from the confusion caused by the coming and going of borrowers, and these are the encyclopedias, atlases, and recently bound volumes of magazines. In addition there are books temporarily restricted at the library in order to meet the current demand of a number of students. These are usually kept on shelves behind an attendant's desk. A vertical file for pamphlet and clipping material is an essential to the reference librarian and should be placed near her desk, if it is not feasible to include it in the wall shelving. Shelves are also needed upon which groups of books may be reserved for the use of classes in schools, reading clubs, study groups, etc. Much of this material has to be placed in such a position

that the librarian has complete command of it, and in many cases it is worth while to shut it off completely from the general library user. A still more restricted and personal use is made by persons doing continuous study, who wish to have books near at hand and a table and chair conveniently close enough to consult them easily. Such students are annoyed by persons crowding behind their chairs to look at books on the wall shelves.

In a number of libraries rooms for "browsing" are popular and are considered valuable. The fact that the entire collection of books is open to everyone raises the question as to whether, because that privilege is extended, it is unwise to make a selection from it of books which might be especially appealing. No library built today fails to provide for a children's room and for arranging there the juvenile books by themselves. Moreover, in many small libraries another division is arranged whereby special provision is made for the between-age boys and girls, corresponding to the junior high school principle, arranging books likely to attract them.



Whitinsville Library, Whitinsville, Mass.
R. Clipston Sturgis, Architect

Newspapers do not usually present a problem as regards shelving, in the small public library. If there is a local newspaper, it should be bound and preserved, but it is not necessary to devote valuable space for shelving it, for it will not be frequently consulted. The present practice is to lay out the main floor of a small public library in one room as far as possible. Practically no partitions are used, but divisions are made by book shelves instead. In many places in which supervision demands it, shelving no more than 4 feet in height is used to advantage. Chalmers Hadley has recently pointed out that, "a safe rule regarding book shelving in small libraries is to have no book stacks until the shelving capacity of all wall and floor cases has been exhausted; and have no floor cases, except to divide floor space, until the capacity of all wall shelving has been exhausted, and," he adds, "another good rule is to have no steel or other metal shelving until it is necessary to have the book stacks two or more stories high. Wooden shelving is less expensive than metal, it is more beautiful and is more comfortable to work with in cold weather. It will be well to have all shelving, furniture and trim in the library of the same wood and finish."

The standard wall case is one with a baseboard 4 inches high, seven shelves high, with the supporting uprights 1½ inches thick and a cornice 3 or 4 inches deep. The uprights should not be over 3 feet apart or the weight of books on the shelves will be likely to make them sag. All shelves should be adjustable, and the pinholes should be 1 inch apart. For oversized books, a few cases with shelves 12 or more inches deep and high will be sufficient in the ordinary small library. In planning required shelf capacity it is essential to think of the building as serving practically without general alterations for 20 years. It is easy by estimating the growth of the book collection at the present rate for that time, to get the maximum capacity required. It is to be kept in mind, however, that there will be constant book withdrawals, owing to wear, as well as addi-

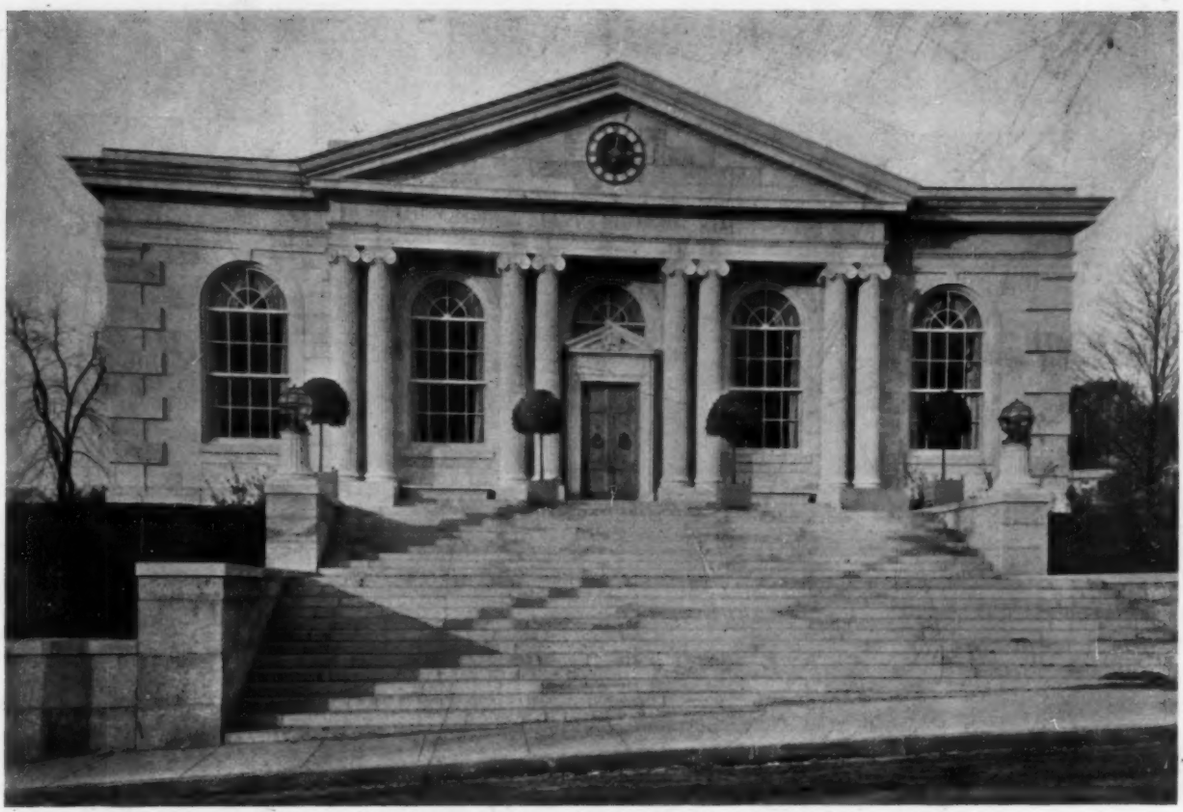
Reading Room, Public Library, Needham, Mass.
Ritchie, Parsons & Taylor, Architects

tions. It is the present practice of librarians to discard "dead" books so rapidly that in many cases the number of volumes of a collection remains fairly constant. To estimate capacity, take as a measure eight books to the running foot. One third of each shelf should remain vacant to avoid constant shifting of books on overcrowded shelves, and to decrease the wear and tear on too tightly shelved books. In wall cases seven shelves high, the capacity is 56 volumes per foot. Double-faced floor cases of this shelving have a capacity of 112 volumes a foot. Floor cases should be placed at least 4 feet apart if the general public is to be allowed to consult books on the shelves. The shelves in the children's room or part of the main room devoted to children should not be as high as those in the adult sections. As an emergency measure we tolerate that plan which builds all shelving the same height, but covers up the two top shelves in the children's room with a panel hinged at the top and caught at the bottom. These panels, being made of a frame filled with cork carpet, are used as bulletin boards, and the space back of them for storage purposes. To my mind, wherever possible, it is better to treat the thing honestly and make the shelves the right height for the children, and utilize the wall spaces above for large pictures. Instead of storage spaces, these cupboards become catch-alls, and as a general thing the pictures which are put on these suggested bulletin boards are so small and so high above the children's line of vision that they are worthless for this purpose.

Recent libraries possess a great deal of charm and attractiveness. Their architects have been able to get away from the "storage" idea. They have abandoned for the small library a stack which manifestly is a storage utility and makes no appeal to a book-lover to browse and to read. They have utilized the lure of books, themselves properly placed, which is after all one of the best decorations a library can have. The next step will be that courageous architects and building committees will give more and more study to the problem of placing shelves for the convenience of people using the books on them and for the attractiveness of the whole scheme. It may be that they will evolve something entirely new in the arrangement of shelving. Instead of filling every available space with books, wherever they may chance to stand, each unit of the plan will be studied for its use and the shelving prepared accordingly. Books that are intended for home use only, will be placed near the loan desk, together with groups of special collections for borrowers. The newest additions to the library will be displayed there. This unit will be worked out on many of the same principles which govern the attractive book shop. The unit for children will be developed by itself. For serious study another unit will be planned, free from noise and confusion of borrowers, containing only those books most essential for the use of students; and this planning will be done not with the idea of doing something unique and novel, but with a more carefully thought out plan of making books convenient to the particular group of people who shall use them, which after all is a library's function.

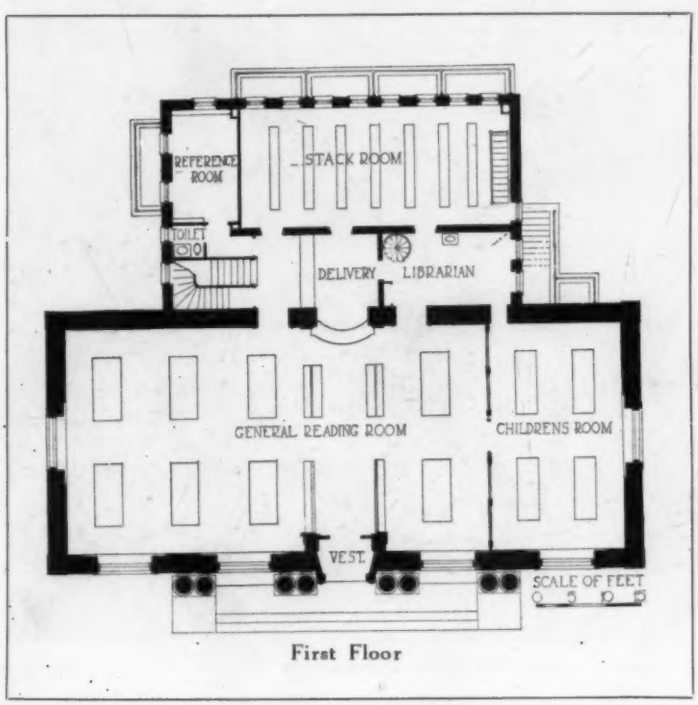
Children's Room, Beebe Memorial Library, Wakefield, Mass.
Cram & Ferguson, Architects

Entrance Hall, Public Library, Rye, N. Y.
Hobart B. Upjohn, Architect



GEORGE MAXWELL MEMORIAL LIBRARY, ROCKVILLE, CONN.
CHARLES A. PLATT, ARCHITECT

THE old saying that "A thing of beauty is a joy forever," is quite as true and applicable in architecture as in any of the other arts. In the gradual development of American architecture, each year brings forth new designs, solving new problems and showing fresh inspiration. The problem of designing a public library for a small town has been successfully developed and worked out during the past 20 years in a great many attractive examples and varied styles of architecture. Earliest and foremost among the successful solutions of the small library problem is the Maxwell Memorial Library at Rockville, Conn., designed by Charles A. Platt in his inimitable style, inimitable because in all Mr. Platt's work is found delicacy of detail, refinement of taste, and dignity of design approaching ultimate perfection. Combined with these salient traits is an innate appreciation for, and understanding of scale, proportion and balance, which only an artist-architect is likely to possess. In these all-important qualities, the Maxwell Library stands preëminent as being all that a small library should be.



First Floor

Situated on rising ground and approached by two tiers of broad granite steps, the marble walls and pedimented Ionic portico of the building itself stand with imposing dignity. In style the building is a combination of Greek and Colonial, of five well proportioned Colonial arched windows, three of which are grouped under the center Ionic portico, indicating the general reading room, which occupies the entire front of the building. A monumental

(Outline Specifications, Details and Cost on Next Page)

FORUM SPECIFICATION AND DATA SHEET—25

George Maxwell Memorial Library, Rockville, Conn.; Charles A. Platt, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Fireproof.

EXTERIOR MATERIALS:
White marble.

ROOF:
Slate.

WINDOWS:
Wood, double-hung.

FLOORS:
Quartered oak.

HEATING:
Hot air.

PLUMBING:
Enameled iron fixtures.

ELECTRICAL EQUIPMENT:
Lighting.

(*Perspective and Plans on Preceding Page*)

INTERIOR MILL WORK:
Quartered oak.

INTERIOR WALL FINISH:
Smooth finished plaster, painted.

INTERIOR DECORATIVE TREATMENT:
Marble pilasters and panels, carved oak, screen, ornamented plaster frieze and cornice.

NUMBER OF BOOKS PROVIDED FOR:
Approximately 30,000.

APPROXIMATE CUBIC FOOTAGE OF BUILDING:
190,000.

YEAR OF COMPLETION:
1903.

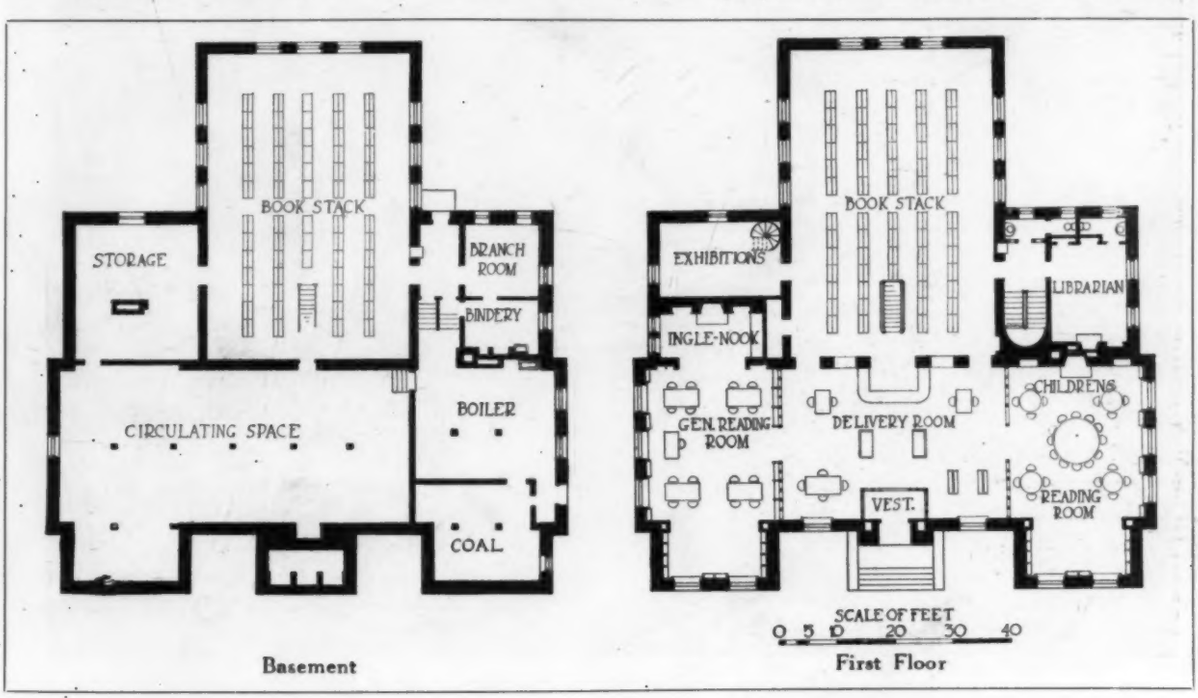
entrance door breaks into the arched window at the center of the design in a frank and successful manner, treated in such a way that the window is felt to exist back of the entrance door, thus preventing another break in the continuity of the five arched window openings. This was one of the first instances in modern American architecture of the introduction of an entrance door in a window motif. Since this precedent was established there have been countless examples in bank buildings as well as town halls and libraries of this combination of pedimented doorway and arched opening. Coupled Ionic columns give strength and grace to the center feature of the design, the projecting portico permitting use of free-standing columns instead of the more usual engaged columns or pilasters.

View General Reading Room Toward Children's Department

WHITINSVILLE LIBRARY, WHITINSVILLE, MASS.
R. CLIPSTON STURGIS, ARCHITECT

ALTHOUGH it is several years since Mr. Sturgis designed and built the Whitinsville Library, no better example of logical and practical planning exists in this specialized field of architectural design. Executed in local white granite of rough texture and irregular bond, the exterior of this little building shows in a simple, straightforward design a suggestion of the interior plan. Each of the small bays which balance the front facade indicates one of the two reading rooms, which in plan balance the center of the delivery room. A few ornamental architec-

(Outline Specifications, Details and Cost on Next Page)



FORUM SPECIFICATION AND DATA SHEET—26

Whitinsville Library, Whitinsville, Mass.; R. Clipston Sturgis, Architect

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Fire-retarding, except front roof, which is wood frame with metal ceiling below.

EXTERIOR MATERIALS:
Granite.

ROOF:
For stack room, tar and gravel on concrete slab. For main building, slate with copper flashings.

WINDOWS:
Wood frames, double-hung.

FLOORS:
Cork carpet in delivery and reading rooms. Marble in book stack room.

HEATING:
Combination direct and indirect steam.

PLUMBING:
Enameled iron fixtures.

(*Perspective and Plans on Preceding Page*)

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR MILL WORK:
California redwood, specially finished throughout.

INTERIOR WALL FINISH:
Plaster, painted.

INTERIOR DECORATIVE TREATMENT:
Walls paneled in redwood.

NUMBER OF BOOKS PROVIDED FOR:
15,000.

APPROXIMATE CUBIC FOOTAGE OF BUILDING:
204,000.

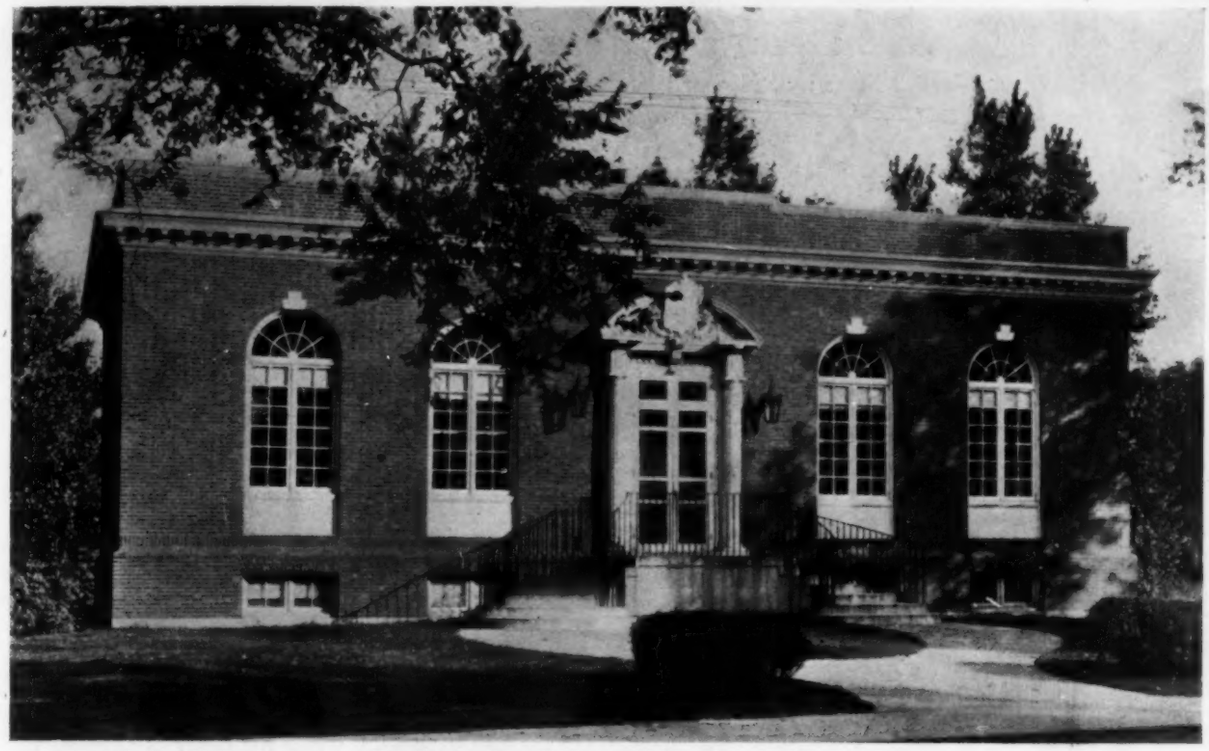
DATE OF COMPLETION:
June, 1912.

COMPLETED COST PER CUBIC FOOT:
27¼ cents, exclusive of furniture and architect's commission.

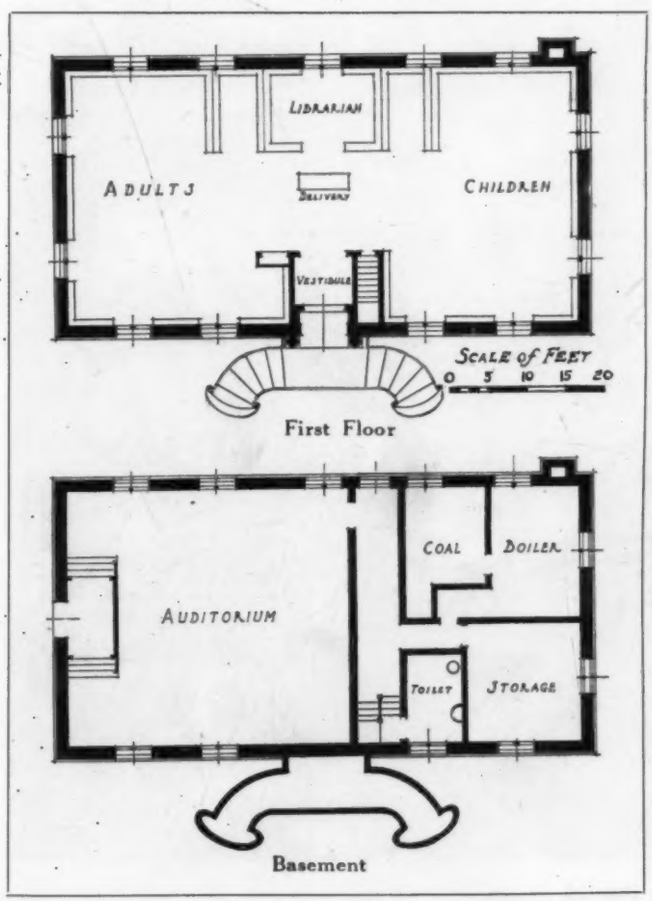
tural details of the exterior design, as well as the well proportioned small paned windows, suggest the Colonial style. A very simple wood cornice with modillions used to decorate the pediments of the entrance and end bays, and the graceful, octagonal cupola, carried out in Colonial details, are the chief decorative features of the highly architectural design.

The well balanced plan shows a general reading room and children's reading room flanking the center delivery room, in the middle of the rear wall of which is located the delivery desk, connecting directly with the book stack room which is placed in the rear.

Interior of General Reading Room, Immediately After Completion



PUBLIC LIBRARY, SHARON, MASS.
C. HOWARD WALKER, ARCHITECT
Of the firm of Walker, Walker & Kingsbury



ALTHOUGH this small library building at Sharon was built some 11 years ago, it is such an excellent example of its particular type, that it has been included in this selected group. Well studied and simple in design, this library shows the influence of Georgian and Colonial precedent. Built at the low cost of $9,740, exclusive of excavations, the result obtained far exceeds in architectural quality the amount of monetary outlay involved, proving that great expenditure is not needed to produce buildings of undoubted architectural merit.

The detail of the entrance door consists of engaged columns, an entablature and broken pediment, the latter richly ornamented with carved decoration showing horns of plenty, branches of laurel and a center cartouch; the double entrance steps, with simple iron railings, accentuate the stylistic character of the design.

The site in the center of the town was wisely selected, not only for location, but also for contour, as a sharp drop in the grade at the rear of the lot made it possible to place in the basement a well lighted assembly hall, having a seating capacity of 100 people. This hall, which has a separate entrance and vestibule, may also be reached from the main floor of the building by a small staircase at the right of the entrance door on the floor above. The remainder of the basement is occupied by storage room,

(Outline Specifications, Details and Cost on Next Page)

FORUM SPECIFICATION AND DATA SHEET—27

Public Library, Sharon, Mass.; C. Howard Walker, Architect, of the firm of Walker, Walker & Kingsbury

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Brick veneer on wood frame.

EXTERIOR MATERIALS:
Red brick, wood trim.

ROOF:
Tar and gravel.

WINDOWS:
Wood, double-hung

FLOORS:
Oak, covered with linoleum.

PLUMBING:
In basement only.

HEATING:
Steam.

(*Perspective and Plans on Preceding Page*)

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR MILL WORK:
White wood.

INTERIOR WALL FINISH:
Smooth plaster, painted.

NUMBER OF BOOKS PROVIDED FOR:
Approximately 10,000.

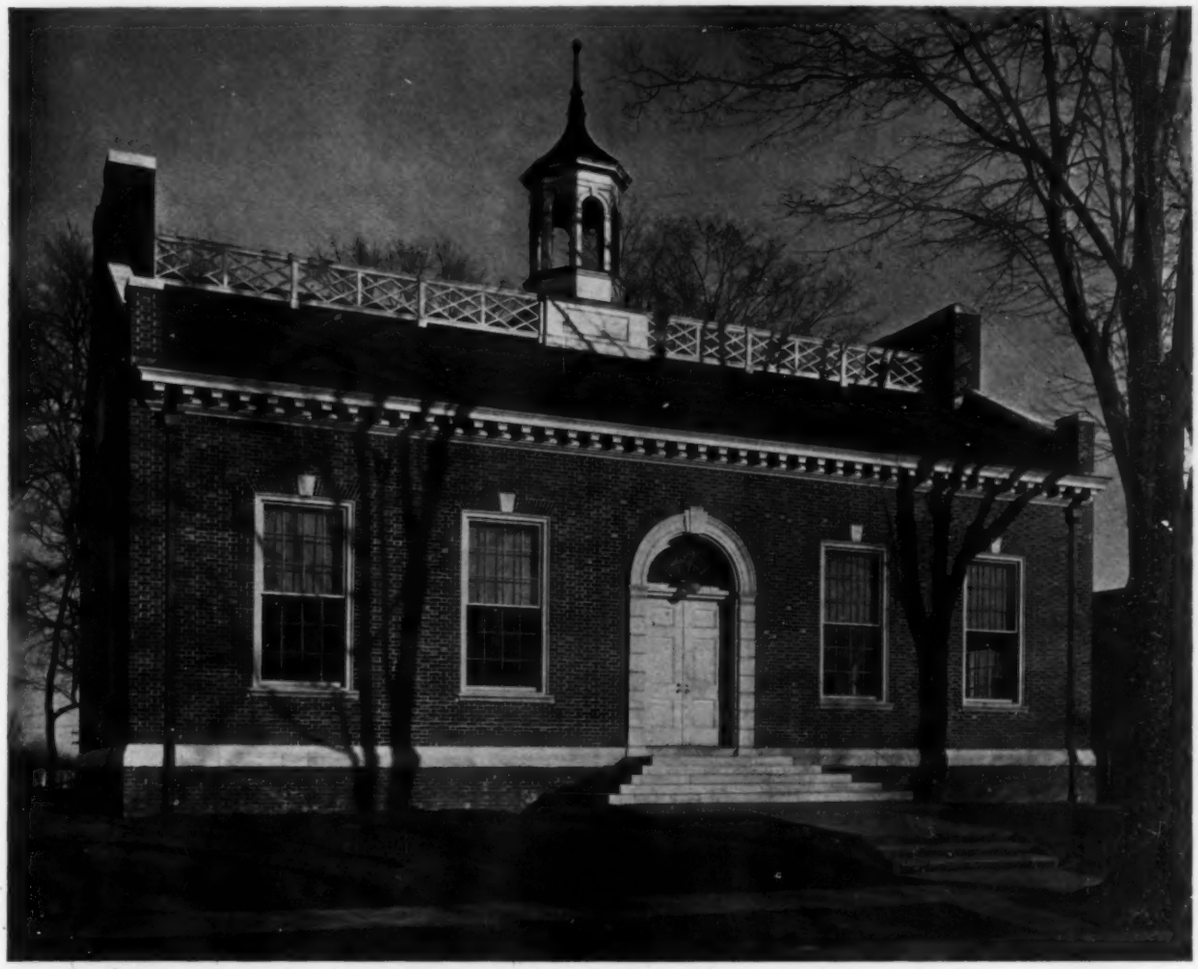
APPROXIMATE CUBIC FOOTAGE OF BUILDING:
46,020.

YEAR OF COMPLETION:
1914.

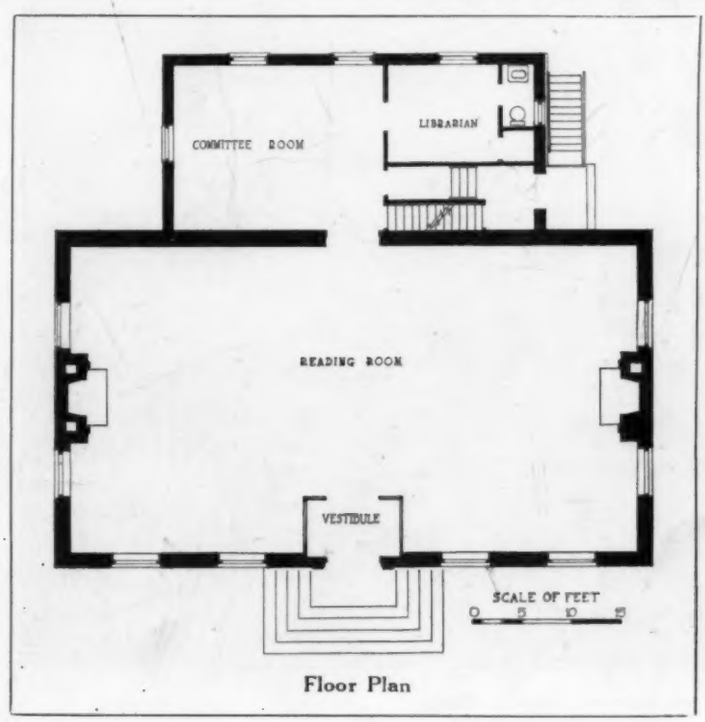
APPROXIMATE COST PER CUBIC FOOT:
48½ cents.

boiler and coal rooms; a toilet opens off the stair-landing. The plan of the main floor is exceedingly simple and straightforward. At the front of the building is a spacious entrance vestibule, opening into the main room which occupies the entire rectangle of the building. The book stacks, which are only seven shelves in height, are laid out in alcove arrangement. Large arched windows on all four sides provide ample daylight for every part of the room. The librarian's desk is properly located in the center of the room opposite the entrance door. From this point, every corner of the room may be under observation. One end of the room is reserved for the use of adults, while the other is devoted to children. There is a pleasant, informal, homelike atmosphere about this room, which may be judged from the illustration at the bottom of this page. In size the building is 30 feet wide by 59 feet long, with a 15-foot ceiling for the main floor and a 10-foot ceiling for the basement with its auditorium.

General Reading Room



MEMORIAL LIBRARY, BOUND BROOK, N. J.
JARDINE, HILL & MURDOCK, ARCHITECTS



Floor Plan

THIS latest example of the small library building, completed in January of this year, shows in its exterior design a pleasingly proportioned and simple adaptation of the Colonial style. Red brick and marble trim for the entrance door and wood for the other details are the materials used for the exterior design. A simple modillion cornice marks the line of the slate-covered roof, which is capped by a Colonial balustrade and small open cupola. The ends of the building are carried above the roof line in an old fashioned manner, terminating in broad end chimneys. White marble has again been used for the caps and coping of the end chimneys and walls. The four large windows in the front elevation are well proportioned and in scale with the arched entrance door, above which a fanlight, divided into small panes of glass, illuminates the vestibule within.

The plan is as simple as the exterior design, one large reading room occupying

(Outline Specifications, Details and Cost on Next Page)

FORUM SPECIFICATION AND DATA SHEET—28

Memorial Library, Bound Brook, N. J.; Jardine, Hill & Murdock, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Masonry walls, wood floor joists and rafters, steel girders and roof trusses.

EXTERIOR MATERIALS:
Red brick with white marble trim, sill course and entrance steps. Wood for cornice, balustrade and cupola.

ROOF:
Graduated slate, copper flashings, gutter linings.

WINDOWS:
Wood frames, double-hung.

FLOORS:
Wood, covered with linoleum.

HEATING:
One-pipe steam, low pressure gravity return.

PLUMBING:
Cast and wrought iron pipes, enameled iron fixtures.

(*Perspective and Plans on Preceding Page*)

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR MILL WORK:
Oak, stained brown.

INTERIOR WALL FINISH:
Smooth plaster.

INTERIOR DECORATIVE TREATMENT:
Woodwork stained, walls painted.

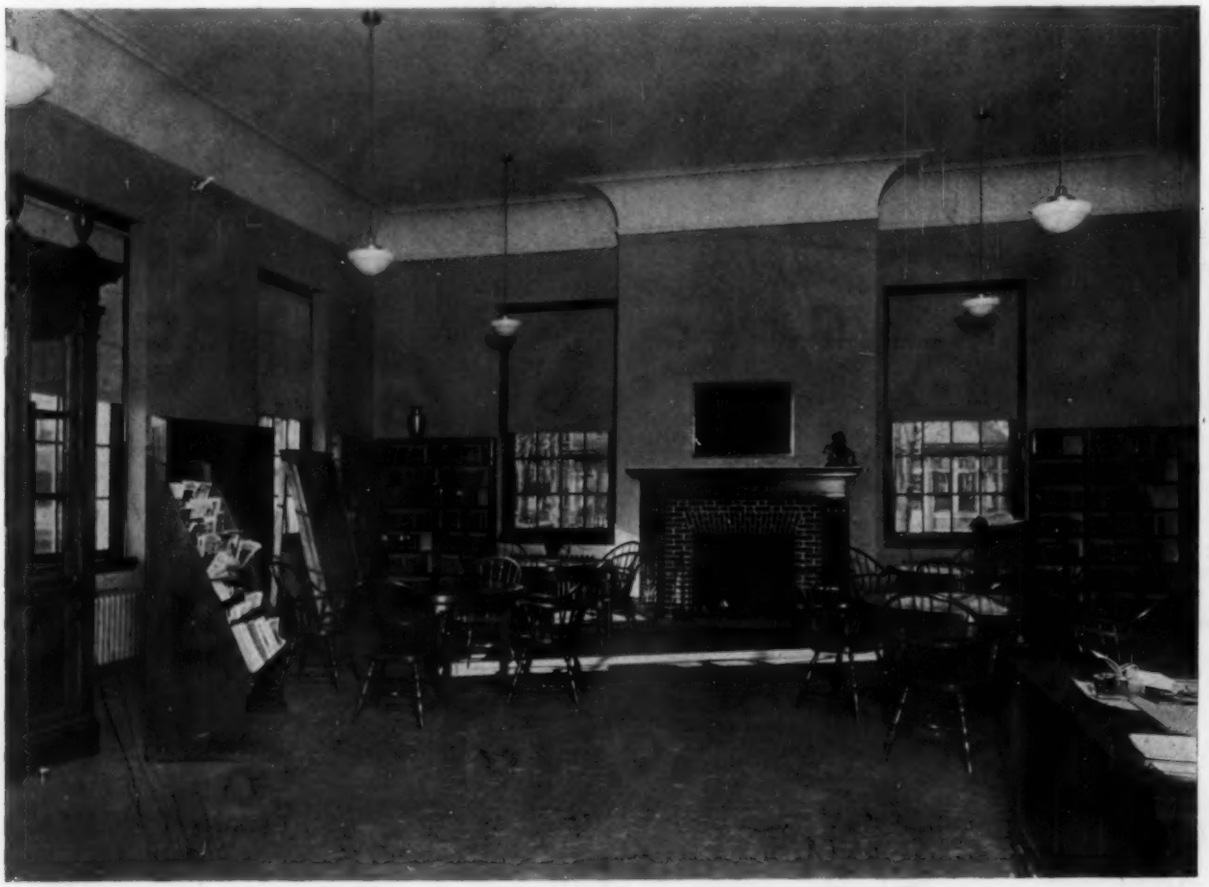
NUMBER OF BOOKS PROVIDED FOR:
6,000 in wall bookcases at present; future expansion to be taken care of in free-standing book stacks.

APPROXIMATE CUBIC FOOTAGE:
86,000.

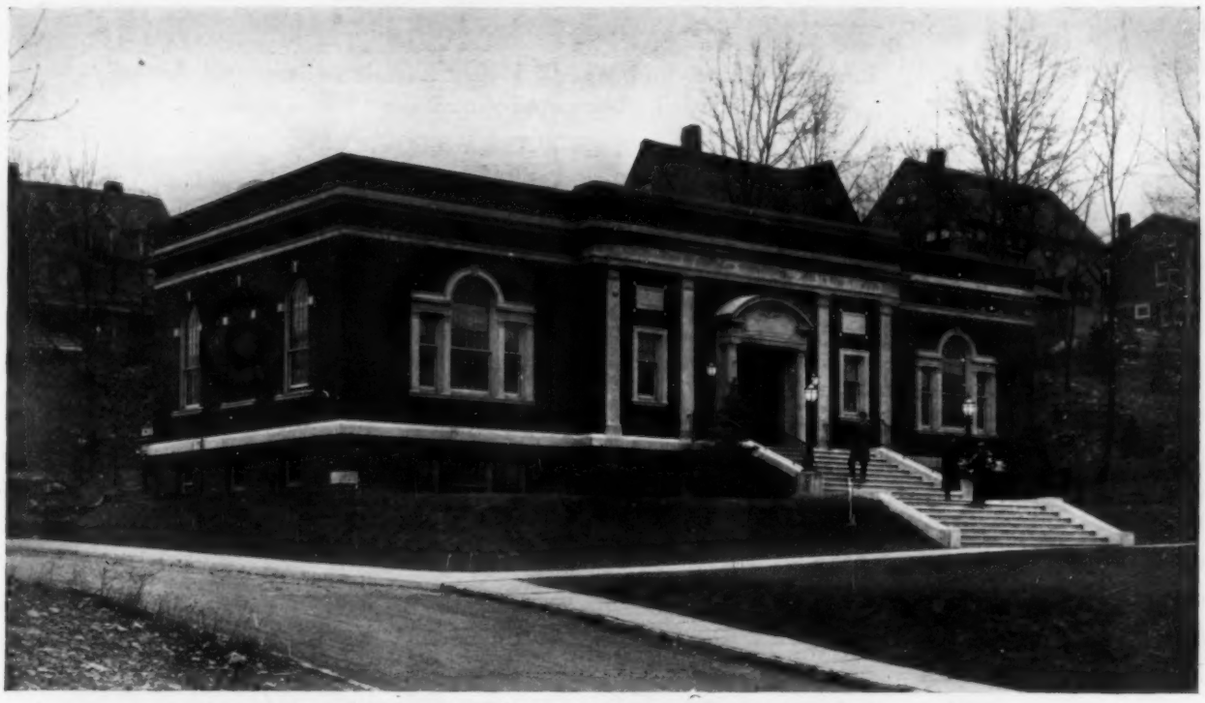
DATE OF COMPLETION:
January, 1925.

COMPLETED COST PER CUBIC FOOT:
Approximately 55 cents.

the main part of the building. The walls of this reading room are lined with high book racks which contain the entire present book collection of the library. Each end of this room has a hospitable brick-faced fireplace. The plain plaster walls are carried into the ceiling by a deep cove. At the rear of the reading room is located the librarian's room. Simplicity marks the character of all of the furnishings, including the heavy stained oak mantelpieces, with their heavily consoled supports, at either end of the room. For a simple, small town library, this little building is admirably planned and designed.



One End of General Reading Room

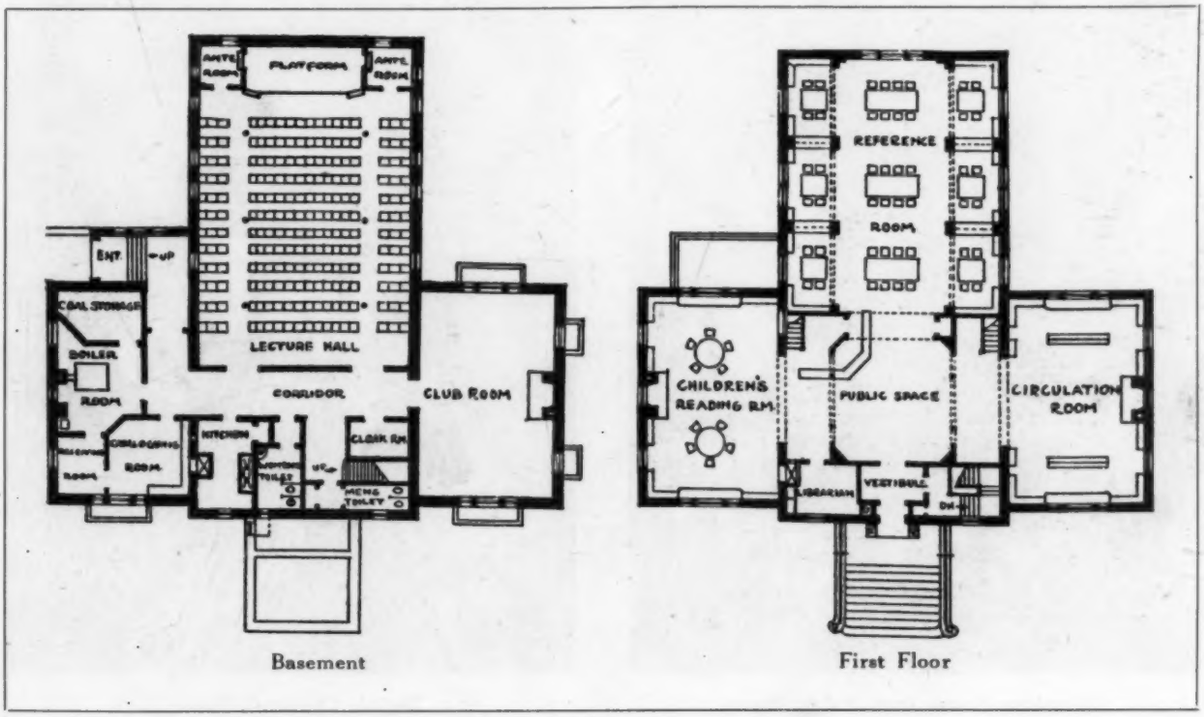


PEASE MEMORIAL LIBRARY, RIDGEWOOD, N. J.

HENRY BARRETT CROSBY AND ALBERT MARTEN BEDELL, ASSOCIATED ARCHITECTS

THE design of the usual small town library building calls for a plan providing two floors, a basement floor where a small lecture hall, club room, coat and toilet facilities, as well as kitchen, boiler room and receiving room are located, and a main floor where the delivery, reading and stack rooms are always placed. Such a plan is found in the Pease Memorial Library at Ridgewood, N. J. The exterior shows a simple Colonial design carried out in red brick with limestone trimmings. A well balanced center bay and entrance door reached by an imposing flight of terraced steps, are flanked on either side by well proportioned Palladian windows. The three divisions of the front facade indicate the interior plan, which shows an entrance vestibule at the front,

(Outline Specifications, Details and Cost on Next Page)



Basement First Floor

FORUM SPECIFICATION AND DATA SHEET—29

Pease Memorial Library, Ridgewood, N. J.; Henry Barrett Crosby and Albert Marten Bedell, Associated Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Slow-burning.

EXTERIOR MATERIALS:
Brick.

ROOF:
Slag.

WINDOWS:
Wood frames, double-hung.

FLOORS:
Compressed cork over wood.

HEATING:
Vapor steam.

PLUMBING:
Enameled iron fixtures.

(*Perspective and Plans on Preceding Page*)

ELECTRICAL EQUIPMENT:
Lighting.

INTERIOR MILL WORK:
Oak, gray fumed.

INTERIOR WALL FINISH:
Plaster sand-finished, left natural.

INTERIOR DECORATIVE TREATMENT:
Gray fumed oak; rough plaster with mural paintings in entrance hall.

NUMBER OF BOOKS PROVIDED FOR:
38,000 at present, with provision for 50,000 in the future.

APPROXIMATE CUBIC FOOTAGE:
135,000.

YEAR OF COMPLETION:
1923.

COST PER CUBIC FOOT:
66 cents.

with basement stairway on one side and librarian's room on the other. The vestibule opens into a large central delivery room or public space with a reading room for children and a circulation room located at the left and right. Beyond the delivery room is a large reference room, with six alcoves lined with book racks, and each supplied with tables and chairs. This room, as well as each of the three front rooms, is controlled from the librarian's desk, located at the left hand rear corner of the delivery room or public space, which is two stories high like the reference room and is lighted by a skylight. The mezzanine gallery, which runs along two sides of the reference room, is provided with additional book stacks and is reached by two small stairways located one in each of the rear corners of the center delivery room.

The interior treatment is simple and restful. All of the architectural features, as well as the trim, are carried out in gray fumed and quartered oak, which harmonizes well with the rough sand-finished plaster.

Reference Room from Public Space

Detail, Children's Room

PUBLIC LIBRARY, NEEDHAM, MASS.
RITCHIE, PARSONS & TAYLOR, ARCHITECTS

AMONG the successful small library buildings completed within the last ten years, is this Colonial example, showing a main building with rear wing. The exterior design is carried out in red brick, with white marble trimmings, for the foundation, corner quoins, entablature and key-blocks. The entrance door and cornice are made of wood. The details of the entrance door, cornice and small clock tower show a consistent use of Colonial inspiration. The arched windows are in pleasing proportion in relation to the wall spaces they occupy, showing careful study of the exterior design. The interior shows the successful adaptation of Colonial

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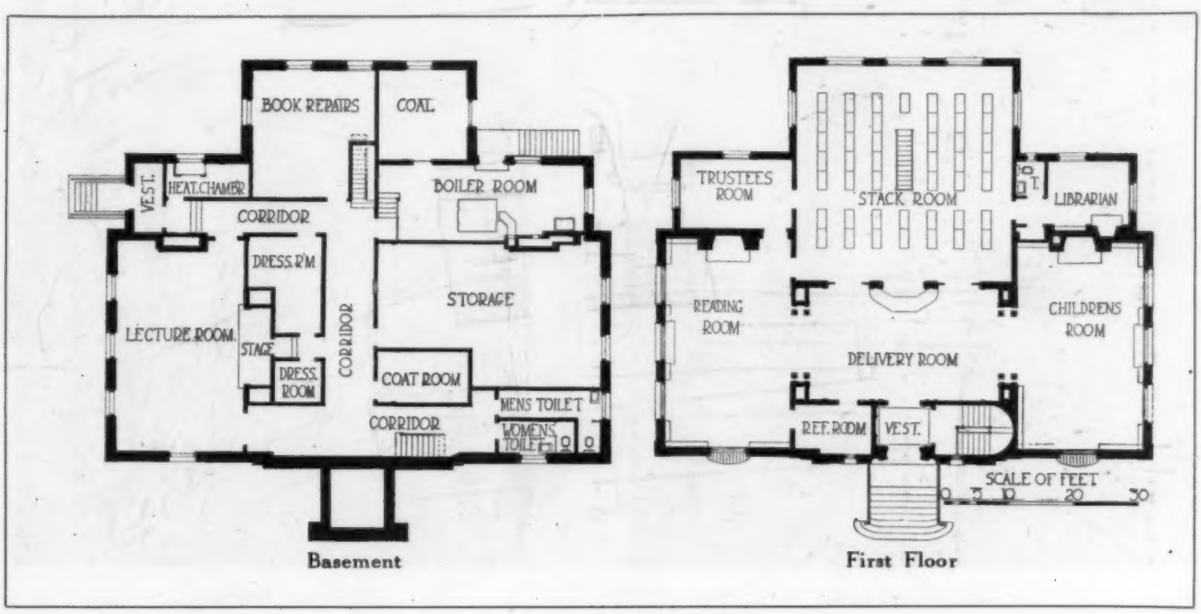


FORUM SPECIFICATION AND DATA SHEET—30

Public Library Needham, Mass.; Ritchie, Parsons & Taylor, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Slow-burning.

EXTERIOR MATERIALS:
Brick, marble and wood.

ROOF:
Slate.

WINDOWS:
Wood frames, double-hung.

FLOORS:
Wood.

HEATING:
Steam, gravity system.

PLUMBING:
Enameled iron fixtures.

ELECTRICAL EQUIPMENT:
Lighting.

(*Perspective and Plans on Preceding Page*)

INTERIOR MILL WORK:
White wood, painted.

INTERIOR WALL FINISH:
Smooth plaster, painted.

INTERIOR DECORATIVE TREATMENT:
Ornamental plaster cornices and wall decorations, combined with wood columns, pilasters and piers.

NUMBER OF BOOKS PROVIDED FOR:
22,000.

APPROXIMATE CUBIC FOOTAGE OF BUILDING:
129,158.

YEAR OF COMPLETION:
1916.

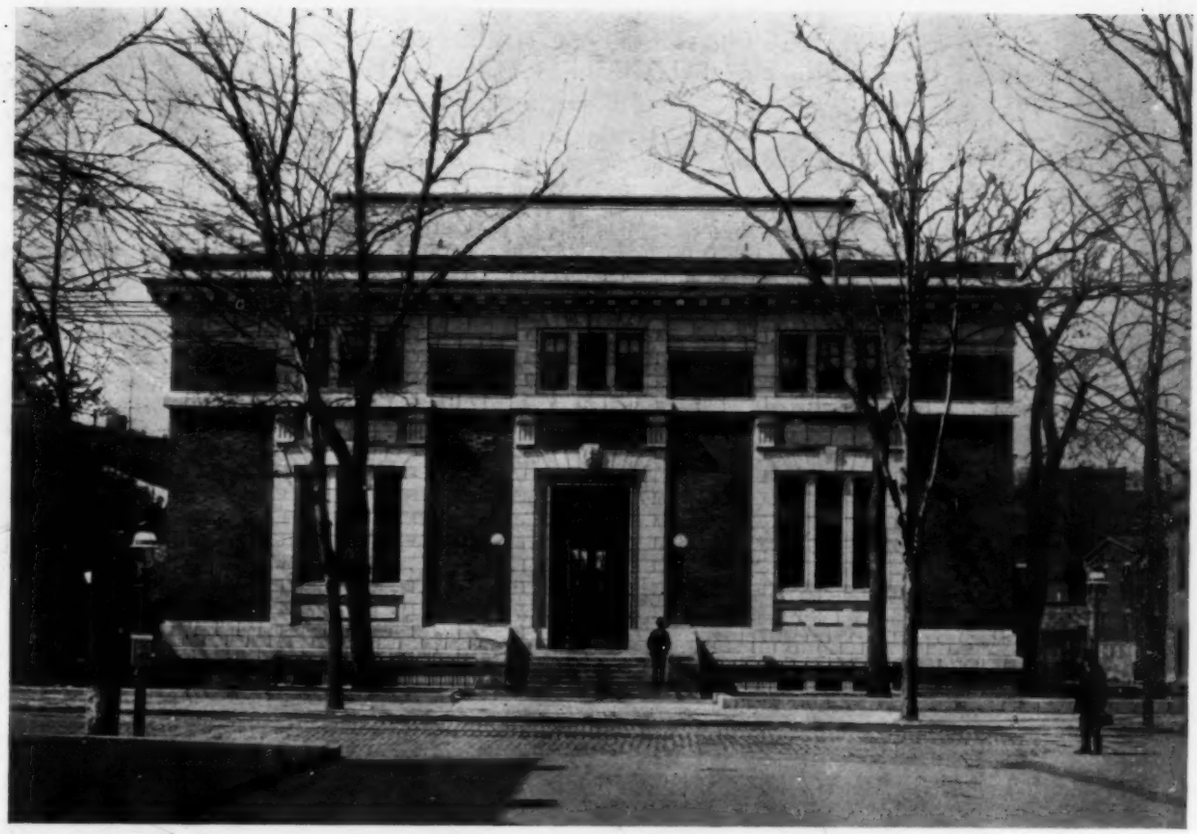
COMPLETED COST PER CUBIC FOOT:
20¼ cents.

details, in the fluted columns and piers, the typical entablature, and the low vaulted ceiling above. White paint used for the walls and architectural details of the interior produces a bright and cheerful effect.

The plan shows two floors, the basement containing a small lecture room, with stage and dressing rooms. Owing to the drop in the grade of the building plot, this room is lighted on one side by three large windows. The remainder of the basement floor is given up to boiler room, storage, a reserve stack room, coat room and toilets. The plan of the main floor shows an entrance vestibule, flanked on one side by a stairway leading to the basement, and on the other by a small reference room, beyond which is a large center delivery room flanked on one end by a reading room for children and on the other by one for adults. Directly back of the delivery room is a good sized stack room, with a trustees' room on one side and a librarian's room on the other. The plan is direct, eminently practical and well balanced.

Entrance Detail

Delivery Room



BEDFORD BRANCH, BROOKLYN PUBLIC LIBRARY
LORD & HEWLETT, ARCHITECTS

THE Bedford Branch of the Brooklyn Public Library has real architectural interest, not only in its simple French Renaissance exterior, but also in its practical and compact plan. The street facade shows a design divided into five parts by three groups of openings. The center group contains the entrance door, approached from the sidewalk by broad granite steps. The broad terra cotta base course, the entablature and enframement of the entrance door and window openings all add to the decorative character of the design. The wide string course of heavy projection pleasantly breaks the vertical wall surfaces of the facade into upper and lower panels. These panels or wall surfaces are laid up with brownish-red brick, contrasting pleasantly with the warm cream of the terra cotta. The scale of the door and window openings as well as the details gives a monumental quality to the building, appropriate to its public character; in other words, this building looks like a public library, which from the standpoint of good architecture means

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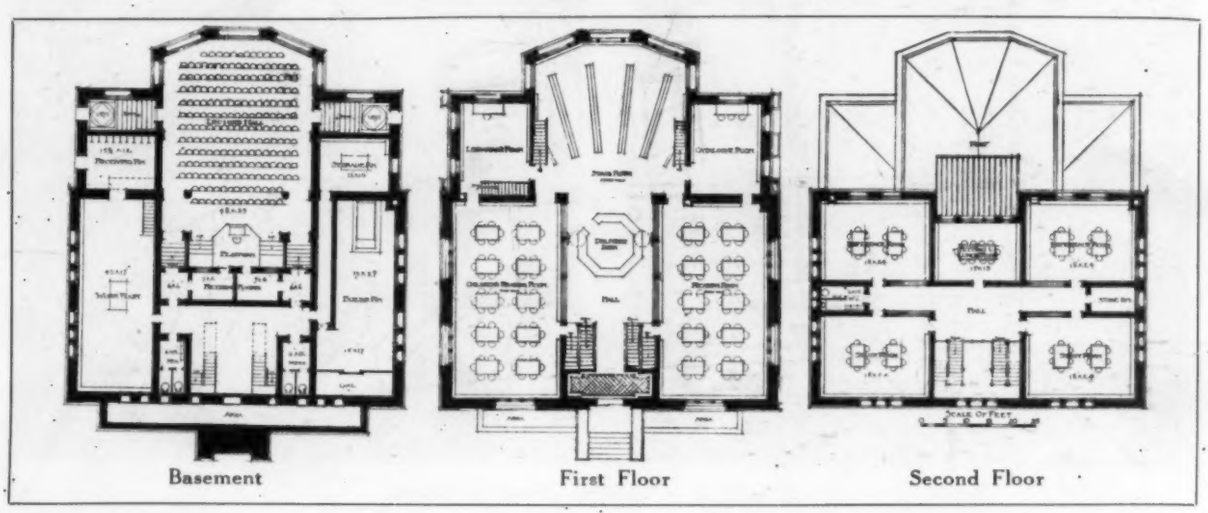


Basement First Floor Second Floor

FORUM SPECIFICATION AND DATA SHEET — 31

Bedford Branch, Brooklyn Public Library, Lord & Hewlett, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Fireproof; steel frame, hollow tile floors.

EXTERIOR MATERIALS:
Brick, with terra cotta trimmings.

ROOF:
Mansard, covered with copper. Flat roof, slag.

WINDOWS:
Casements, wood.

FLOORS:
Edge grain Georgia pine, with exception of entrance vestibule and delivery room.

HEATING:
Low pressure steam.

PLUMBING:
Usual type, enameled iron fixtures.
(*Perspective and Plans on Preceding Page*)

ELECTRICAL EQUIPMENT:
Lighting and vacuum cleaner.

INTERIOR MILL WORK:
Oak.

INTERIOR WALL FINISH:
Smooth plaster, marble and oak wainscoting.

INTERIOR DECORATIVE TREATMENT
Walls, ceilings painted.

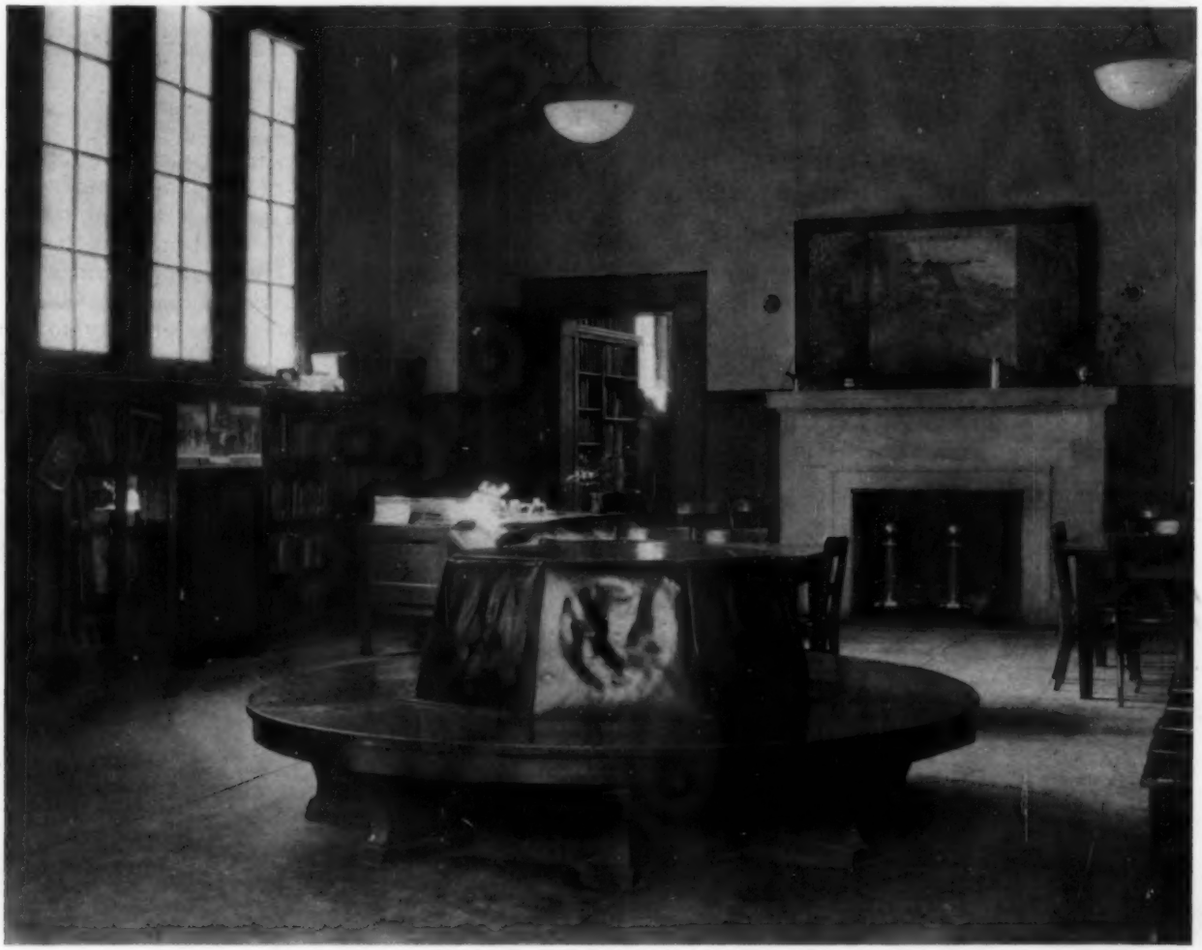
NUMBER OF BOOKS PROVIDED FOR:
30,000.

DATE OF COMPLETION:
December, 1905.

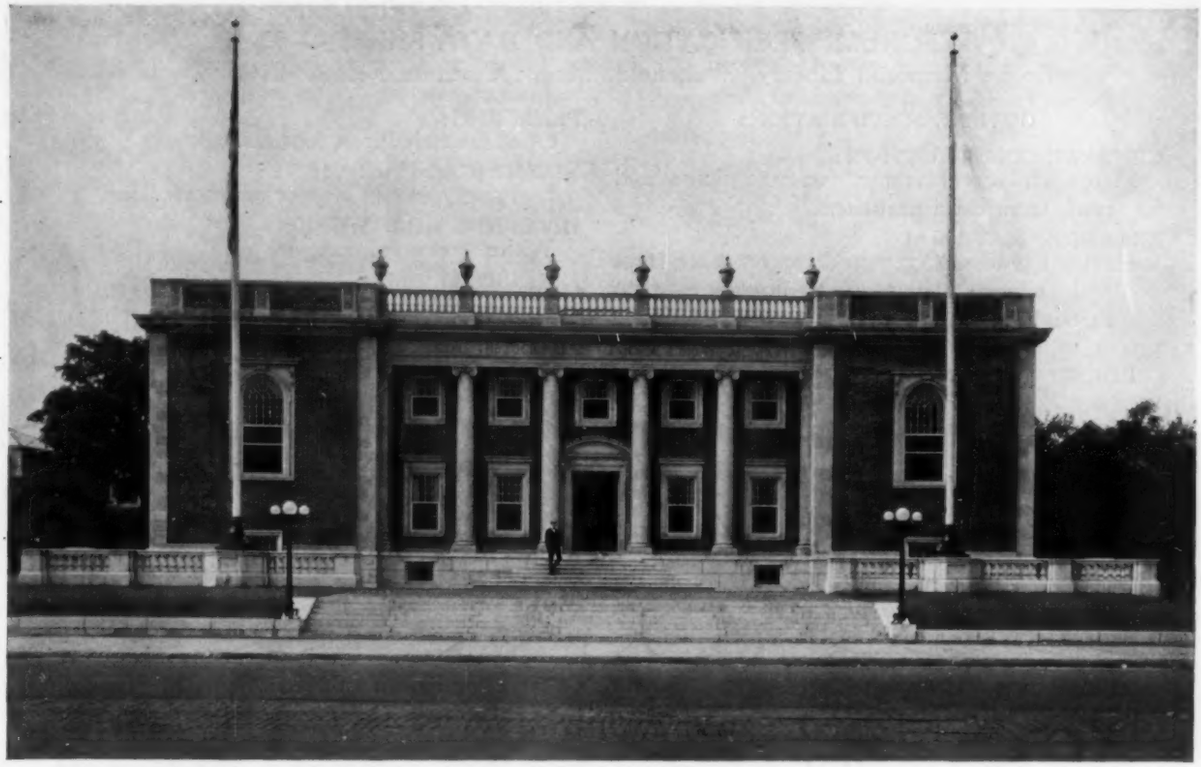
TOTAL COST OF BUILDING:
$85,500.

that the design is carefully considered and successful.

The plan shows a basement, main and second floors. By the use of deep areas on all sides of the building, adequate lighting and ventilation are procured in the basement for the small lecture hall, work room, receiving, storage and boiler rooms. Lavatories for both men and women are located off the basement entrance hall, which is reached by two stairways from the main floor. On either side of the lecture hall, wide entrances with steps lead out of doors, providing exits in case of fire. The main floor shows a well balanced plan with a center door.

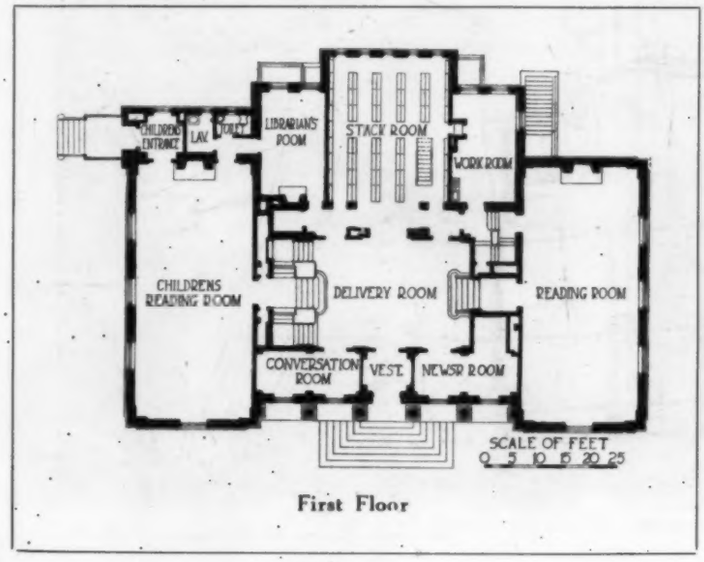


One End of Children's Reading Room



BEEBE MEMORIAL LIBRARY, WAKEFIELD, MASS.
CRAM & FERGUSON, ARCHITECTS

THIS library building, erected two years ago in the town of Wakefield, Mass., is an excellent example of a comprehensive, well balanced and plactical plan. The exterior design is carried out in the Colonial style with two end bays and a center colonnaded motif. Each bay shows a single, finely proportioned window, divided into small panes. Back of the columns in the center portion of the building, are a center door and two stories of windows, which give scale and interest to the design. A balustrade, divided by urn-topped piers, crowns and balances the arrangement of columns and wall spaces below. Parapets continue the line of this center balustrade over each of the two projecting bays of the building. Brick is used for all wall surfaces, and limestone for all of the architectural details and trim. The effectiveness of the design is greatly enhanced by the broad, low entrance steps and the terrace on which the building stands. Ornamental balustrades, with a flagpole feature introduced on each side of the terrace, follow the lines of the projecting end bays of the building itself. This design is an unusually good example of an appropriate type of architectural treatment for a monumental public building, large or small.



First Floor

The plan, which is so well expressed in the front facade of the building, consists of two high studded reading rooms at the far ends of the building, and a number of smaller rooms grouped along the two-story front of the center part of the structure. The entrance vestibule, which leads directly into a monumental delivery room, is flanked by conversation and newspaper rooms. At either end of this delivery or entrance hall, steps lead up to the reading rooms. At one end these steps continue in a double staircase down to the basement level and up to the second or mezzanine floor, which surrounds the delivery room. The librarian's desk is properly located at the center of the rear wall of the delivery room, directly opposite the entrance door. Back

(Outline Specifications, Details and Cost on Next Page)

FORUM SPECIFICATION AND DATA SHEET — 32

Beebe Memorial Library, Wakefield, Mass.; Cram & Ferguson, Architects

OUTLINE SPECIFICATIONS

GENERAL CONSTRUCTION:
Fireproof. Steel frame, concrete floors and roof, terra cotta partitions.

EXTERIOR MATERIALS:
Harvard red brick, granite base, entrance steps and terrace balustrade; limestone trim throughout.

ROOF:
Flat, tar and gravel.

WINDOWS:
Wood, double-hung.

FLOORS:
Marble in delivery room. Cork in reading room, and composition in basement and stack room; wood in all minor rooms.

HEATING:
Steam.

(*Perspective and Plans on Preceding Page*)

PLUMBING:
Open enameled iron fixtures.

ELECTRICAL EQUIPMENT:
Lighting, vacuum cleaner and book lift.

INTERIOR MILL WORK:
White wood, painted.

INTERIOR WALL FINISH:
Smooth plaster, painted.

INTERIOR DECORATIVE TREATMENT:
Ornamental plaster pilasters, medallions and ceilings, smooth finished plaster, painted.

NUMBER OF BOOKS PROVIDED FOR:
34,000.

APPROXIMATE CUBIC FOOTAGE OF BUILDING:
206,000.

DATE OF COMPLETION:
May, 1923.

COMPLETED COST PER CUBIC FOOT:
98½ cents.

of this desk is a large opening leading directly to the stack room. This room is flanked on one side by a librarian's room and toilet, and on the other by a work room, where books may be repaired, cleaned and recovered. Between this work room and the stack room is a book lift which goes down to the receiving room in the basement. At the rear of the reading room set aside for the use of children is a side entrance and hall for their exclusive use. Each of the large rooms has a spacious fireplace at one end. In decoration the interiors have been carried out in a monumental adaptation of the Adam style of Georgian architecture. Richly ornamented door entablatures, ceilings, friezes and wall panels, all executed in plaster, painted, give dignity to the interior designs. The black and white marble floor of the entrance or delivery room, the delicately wrought iron railing of the stairways, the splendid proportions of the two large reading rooms, contribute to the monumental character of the interior.

General Reading Room

Delivery Room or Entrance Hall

INTERIOR ARCHITECTURE

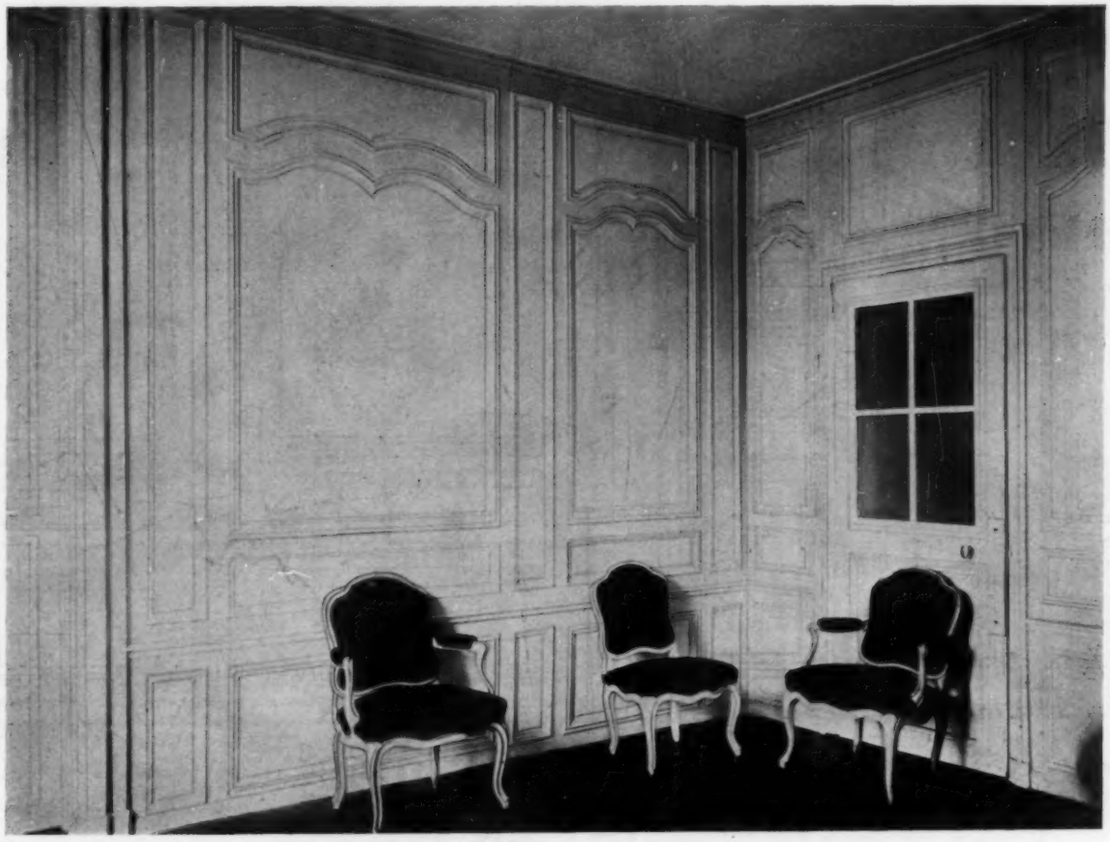
The Arsenal at Paris

By C. HAMILTON PRESTON

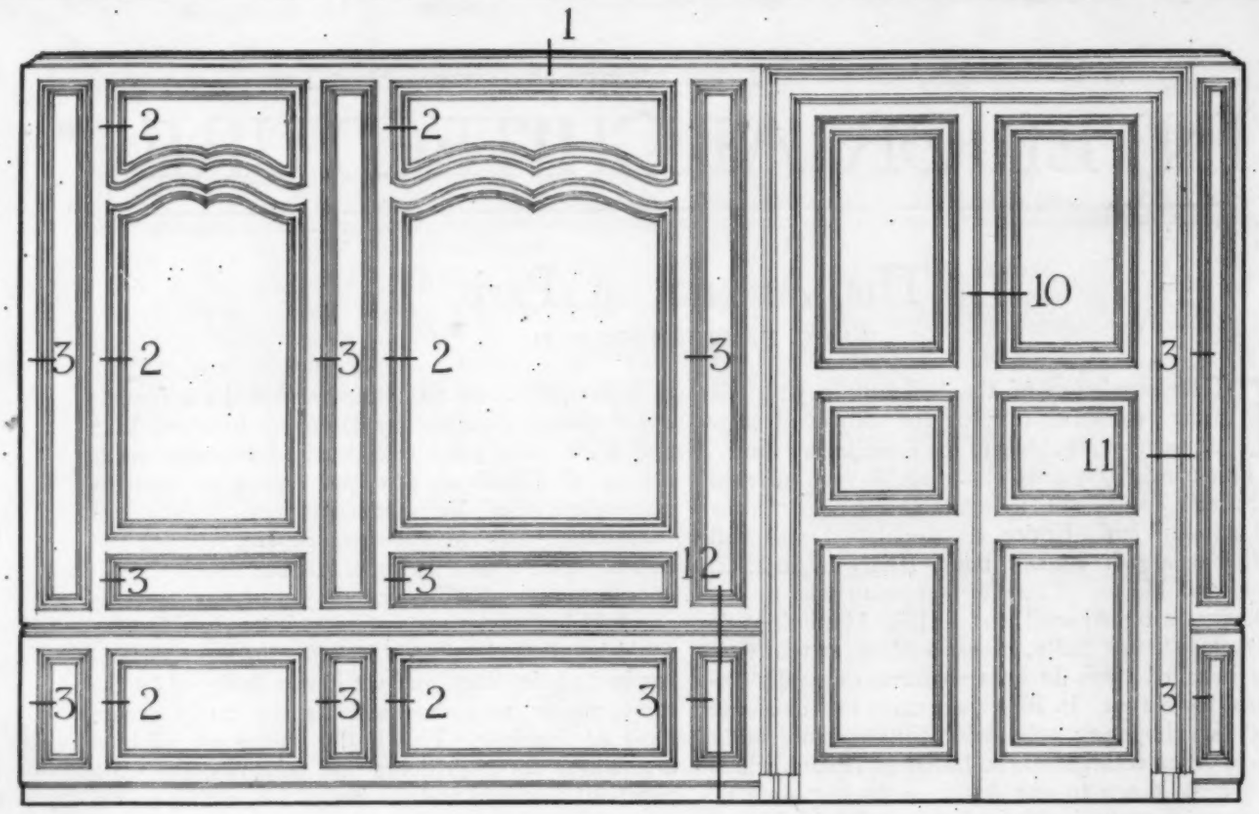
THE foundation of the building in which is found the room forming the subject of these drawings dates back to the fourteenth century. At first a relatively small building, it was enlarged by Francis I and definitely made an arsenal for arms and ammunition. Under Charles IX it was still further enlarged. Finally, under Henry IV in 1572, the Grand Master of Artillery came to take up his residence in the Arsenal, and in 1599 Maximilien de Bethune, Duc de Sully, Henry's Minister of State, was installed there in an apartment especially designed for his use. In 1637 there came into existence that very imposing suite of rooms, so gorgeously rich in ornamentation and so Italian in feeling, which have come down to our day in a perfect state of preservation and which are ever associated with the name of Sully.

In 1718 the Duc d'Orleans caused to be built, after the plans of the famous architect Boffrand, a new wing destined to become the residence of the Duc and Duchesse du Maine, the Duc being a son of Louis XIV. In this wing are found the famous *appartements* executed by Boffrand between 1725 and 1728. The most celebrated of these rooms is the so-called *Salle de Musique,* and is perhaps the masterpiece of all Boffrand's interiors.

Adjoining this room of extraordinary richness and en suite with it is a series of smaller rooms (*petits appartements*) of which the subject of our sketch is one. This little room is simplicity itself. Nothing could be more pleasing in its effect or more charming in its quiet lines, and yet it was designed by the same master who designed the intricately ornate *Salle de Musique.* This is due to the use of bold architraves for both doors and windows, the plain panels of the dado and the use of interesting curves for the major panels above, the panels being broken by double curves with stiles between, giving a very pleasing effect. Rooms of this period have often been badly reproduced and interpreted, but in this dignified little room with its simple curves we have a precedent which may well afford inspiration today.

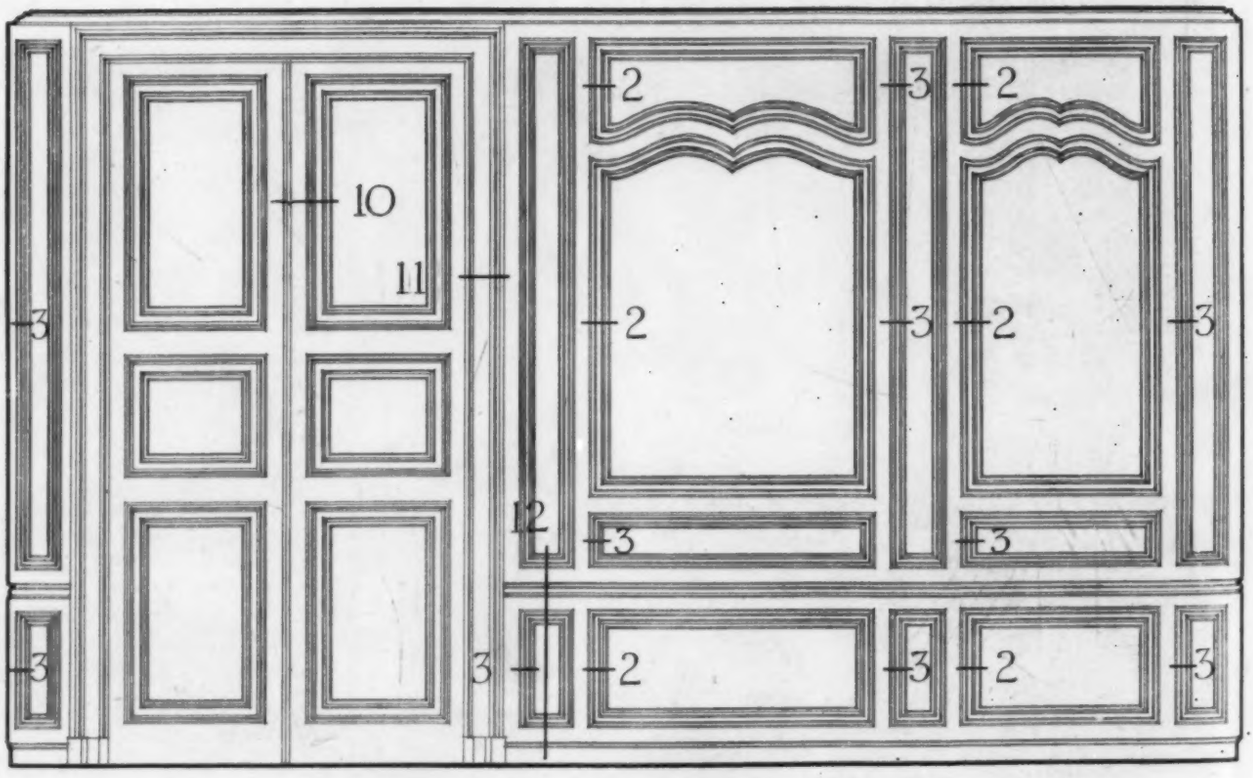


Small Salon, Arsenal at Paris, Showing Wall Paneling



ELEVATION C~C

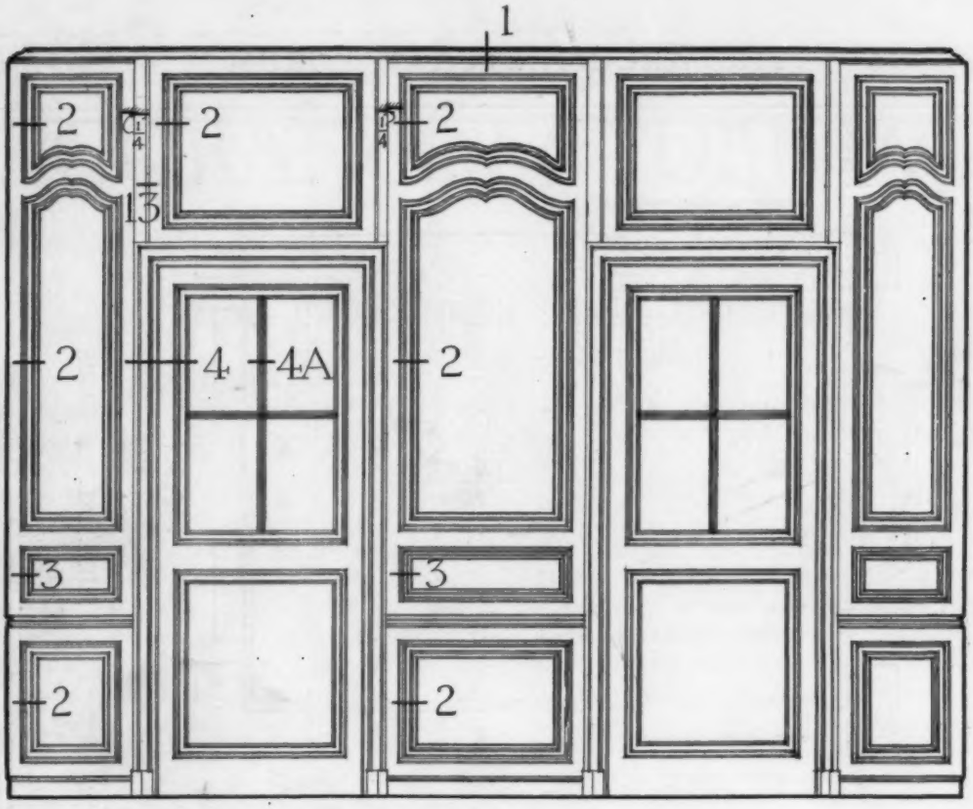
Scale $\frac{3}{8}$" - 1 Ft



ELEVATION D~D

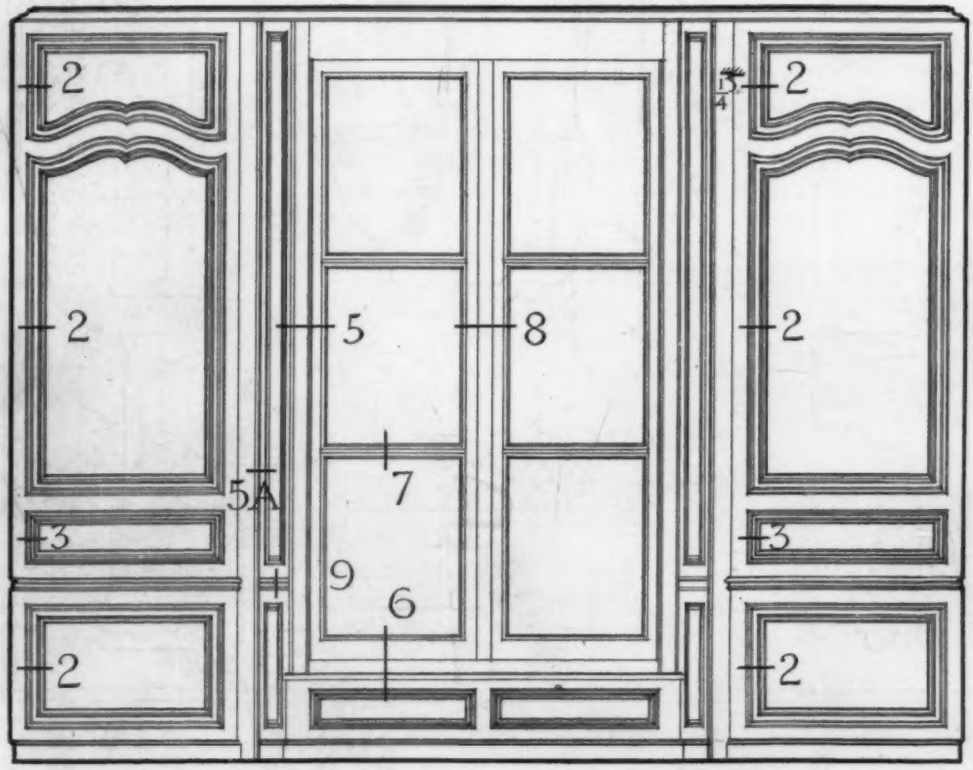
SALON

ARSENAL PARIS



ELEVATION A~A

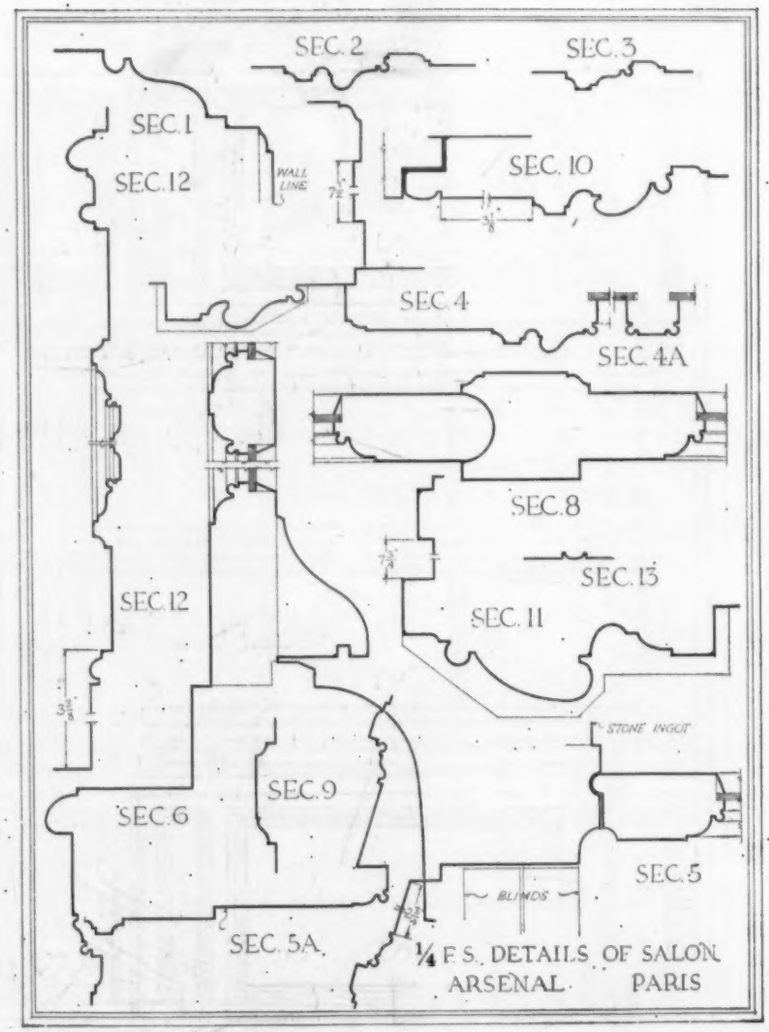
Scale $\frac{3}{8}$" = 1 Foot

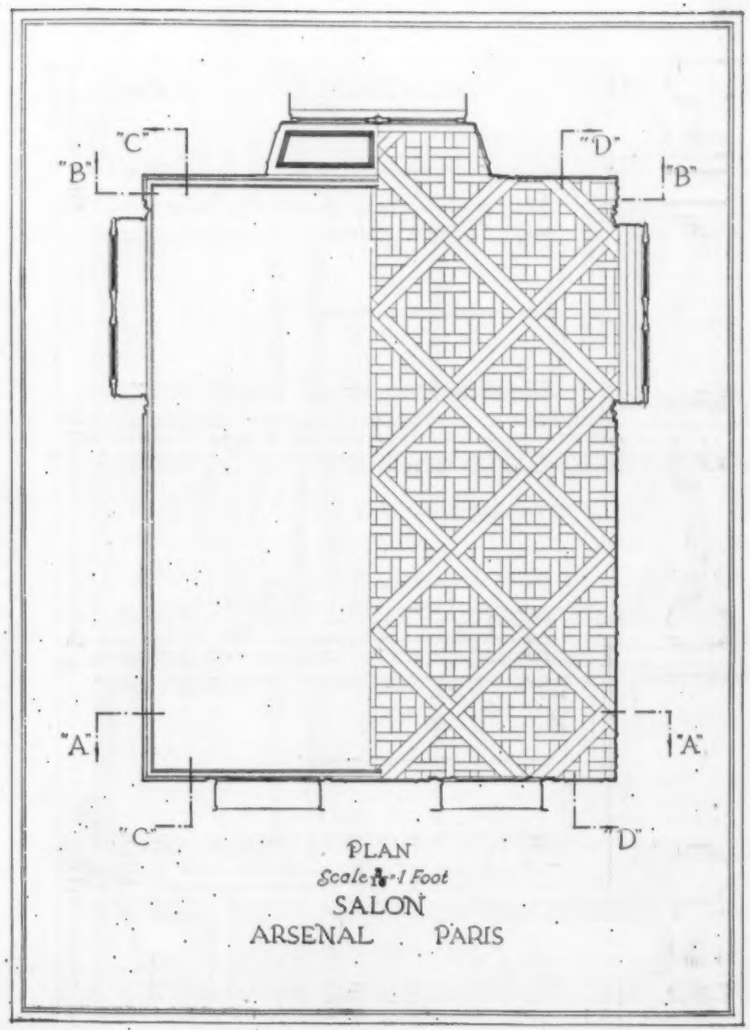


ELEVATION B~B

SALON

ARSENAL PARIS





ARSENAL, PARIS

DECORATION & FURNITURE

Some Notes on French Furniture

By PIERRE DUTEL, Interior Decorator

NO country has given more liberally to the cause of art and decoration than France. Her history and the life of her people and their customs are most interesting, so that it is little wonder that the study of the French styles is found to be so entertaining. Here in America I am sorry to find that the term "French furniture" is misunderstood, and that many people think all French things must be elaborate and over-ornate in design. Most of the examples that one finds in museums and the larger collections are ornate pieces, especially those of the Rococo period. Still, there are many delightful and simpler styles of French furniture that are in scale with our modern homes and which would be in keeping with the furniture of today. The Gothic and earlier types from France were heavy and massive in feeling, similar to Italian work of those times. This early furniture we will not consider, as it is not in scale with the needs of today. The furniture of the eighteenth century, beginning with the Regency period and on through to the Empire, is most delightful and interesting, so it is of this and the possibilities it offers to the modern home maker that I wish to write.

At the end of the reign of the Grand Monarch, Louis XIV, one finds that a change had taken place in building and architecture. Smaller rooms were desired instead of the large and impressive galleries that had been used. These rooms had lower ceilings, and in some cases, as at Versailles, a few of the larger salons had been divided into smaller apartments. The furniture of the Louis XIV period was found to be too heavy, so a lighter and more restrained type was introduced. The chairs were smaller, with simpler lines and lower backs; the tables were of smaller proportions and were produced by cabinet makers, such as Boulle, who was court cabinet maker during the great king's life, He now designed furniture of smaller scale but still in character with his earlier work. Cane was introduced in chair seats and backs, and finer and more naturalistic design was found in the fabrics of this period. Everything was now of a simpler character.

From the Regency to the first part of the reign of Louis XV one finds but little change. This is one of the most delightful of the French periods. It contributed some splendid examples of interior architecture, and it is here that one finds the paneling divided into smaller areas and the introduction of the curve in decoration. Scrolls and curves gave a feeling of lightness that was not found in the earlier styles of architecture or furniture design. Color was used more freely than before, and formal rooms paneled in gilt and marble gave way to smaller chambers paneled in wood and painted in colors.

In time design became very naturalistic, and later

Photo. Jacques Bodart

This interesting old desk in lacquer, green and dull gold, makes a charming bit of color, such as is often found in old furniture. It is suitable for a country house on account of its simple lines and decoration, or would lend atmosphere to a library well filled with old books

Photo. Jacques Bodart

This delightful desk in walnut has charm and grace in its flowing lines and curves. The cupboard on top is secreted by a door of old book backs, which lend color to the mellow wood. Such a piece would be an addition to a room, furnished according to almost any period

it developed too much of this character. Italy was going through a theatrical age, and France was soon to follow. What Italy started in design, France finished with more finesse. In other words, this was the period of transition between the stately pomp of the time of Louis XIV and the irresponsible frivolity of that of Louis XV. At this time painted interiors and furniture became the vogue. Characters from the fables of La Fontaine and other writers were introduced into decoration, in both fabrics and wall hangings. A charming example of this is found in one of the small rooms that is in the Musee des Arts Decoratifs, and other examples are to be found in the Carnavalet Museum, near the Place des Vosges. Among the artists who created most of these exquisite examples of mural work were Huet, Fragonard and Boucher. These men, who were noted for portraiture as well as for this style of decoration, received and executed commissions by royal command for palaces and chateaux.

A delightful grouping of French furniture, showing Directoire table in mahogany, a transitional late Louis XVI and Directoire chair and *tole peint* lamp and print shade of interesting design and coloring

In the provinces a change also took place, so that today one may find many delightful examples of the work of French country cabinet makers, In fact at the present time there is quite a demand for this simple type of peasant furniture for both our country and town houses. The most important piece of furniture of the peasant type was the wardrobe. This and the Brittany bed were the two important items among a bride's possessions. The wardrobe was known as a *garderobe* in Provence, as a *lingere* in the southwest, and as a *corbeille de mariage* in Normandy. Some wardrobes were made in two sections, and another type which was quite large fitted against the wall at one end of a room. This was part of a bride's dowry, and if one can take the time and go off the beaten track in France there are many lovely pieces of this sort to pick up for very little money.

To Boulle must go the credit for the first bookcases. It was at the end of the year 1700 that the bookcase could be differentiated from the cupboard. Authentic Louis XV bookcases are rare and bring very high prices at both auction and private sales. They are quite low and wide, with marble tops and grilled doors of gilt wire. Another interesting type of cabinet or cupboard is that made to fit into a corner. Angles were shunned in the Louis XV period, so we find the invention of the corner cupboard. It was generally designed with a series of three shelves, gradually diminishing in size toward the top. A pair of these were greatly coveted and gave a *cachet* to a room. Lazare Duvaux made a number of them in painted wood and also in mahogany, all highly decorative.

Another practical piece of furniture, which was derived from the cupboard and which is equally useful today, is the cupboard-secretary. This was chiefly made of rosewood with inlay of another wood of lighter color. Then, when the craze for lacquer was at its height during the reign of Louis XV, many of these pieces were decorated with lacquer panels. Most of this work was designed and made in France, and the lacquered parts were sent to China to be painted by the orientals. Vernis Martin, a coach painter, developed at this time a style of furniture painting that was very delightful, and some charming commodes and secretaries were decorated by him and his workmen. Many still exist.

A Provincial painted wood bed, found in Dijon, which has the feeling of Louis XV design, showing carved urn decoration on the headboard. It is finished with a water stain to resemble reddish colored walnut. The night table is Empire with brass mountings and porphyry top. The old red *toile de Jouy* spread is of the period and interesting in design

Beds of the Louis XV period are quite rare. They were generally draped and covered with damask or *toile*. In the provinces, however, one may find many charming beds that are suitable for use today in a French type of bedroom, if put in proper condition by a cabinet maker. The bed illustrated here, from Dijon, is late Louis XV, of simple character. It has carved decoration of an urn, which device being classic was much used as a decoration for the headboards of beds. This bed is

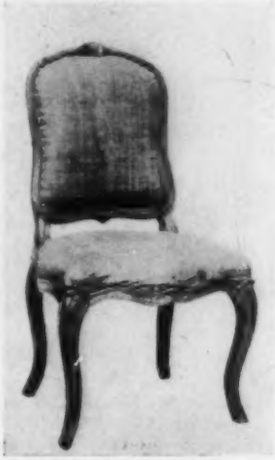
finished in a water color stain which resembles mahogany, and which was much used later in many ways during the late Louis XVI and Directoire periods. The most charming pieces of French furniture were made during this latter age. From the sumptuous and ornate classicism of the court of Louis XIV we find the change to the frivolous character of the Louis XV period, and then a return to the classic spirit again. This time the scale is much finer, and furniture has more delicacy and fineness. Marie Antoinette and her court took up the simple country manner of life and delighted in the quaint and interesting villas and cottages which were designed and furnished to please her whims, with the chintzes and simple furniture that are ever a real pleasure.

This pleasing group consists of a mahogany Louis XVI writing table with brass mounts, a Directoire chair covered in an old *toile de Jouy* pattern of the period, and a tole lamp with square shade showing old French views of Paris

It is interesting to know that there were few dining room tables during the Louis XV period. One finds very little reference to rooms that were set aside exclusively for dining purposes. The Gallic or feudal custom was to eat alone, and one finds many small and interesting tables that were used at meal times. In one of the letters written by the Duchess of Orleans, she complains of the "utter boredom in eating alone." In the later eighteenth century one finds the terms *table a manger* and *table a l'Anglaise,* which were in use in the early part of the reign of Louis XVI. They were mostly round tables with large drop leaves and made to stand against the walls when they were not in use.

Between the Louis XVI and the Empire periods there was a transitional stage known as the Directoire. This lasted only a short time, but brought into use some of the purest and most perfect types of classic design in architecture and decoration. Sponsored by Mme. Recamier, Mme. Vigee-Lebrun and David the artist, tripods and other antique forms of furniture with classic motifs for decoration replaced the types of furniture and ornament used hitherto. The curve in its most slender form was developed, and everything was designed in a light and charming scale. It is no wonder that decorators and artists today are using this style of decoration so frequently, and that so many of the delightful examples of the furniture of this period are being reproduced by modern cabinet makers. Walls were draped with silks and other fabrics after antique designs. Use of wrought iron and bronze came into vogue. Ormolu and other metals were much used. The urn, which was one of the most popular ornamental details of this period, can be found in many forms of decoration. Marbles and the use of marbleized wood were much employed. A painted paper resembling marble was introduced at this time, and pieces are still found lining old commodes and dressers of the period. It gave richness at small cost.

After the influence of Napoleon was felt, furniture and decoration assumed a heavier character. Military emblems and trophies of war were used to decorate chair backs and other surfaces of furniture. The use of the tent motif was introduced in interior decoration. Stripes were extensively used for silks and other fabrics; amusing designs of balloons and parachutes as well as *carrousels,* with figures of gracefully attired ladies and gentlemen, were changed for scenes of war and views of battlefields. In the *toile de Jouy* patterns there is one delightful reproduction showing Napoleon and Josephine (after he was crowned Emperor) with the palm tree, the emblem of Italy, and the sphinx, which represented Egypt. This is in colors upon an ecru ground, and is quite gay with spots and touches of red, bright blue, green and gold. One of the most important colors of this period is a deep reddish chocolate



Photo, Jacques Bodart

The chairs of the early Louis XV period were graceful and simple in design, but more ornate later

Photo, Jacques Bodart

Old country pieces have quite an appeal to the American buyer and fit well into our interiors. This bureau is painted red, with the design and mouldings picked out in gilt

Photo. Jacques Bodart

An old provincial piece in rich walnut with bronze mounts makes a charming point of interest around which may be grouped furniture in any modern or old interior

color known as "Etruscan brown." Berthaud, under the guidance of Percier and Fontaine, decorated a room for Mme. Recamier in which mahogany was used for the walls, the door frames, the doors themselves, and even the smallest article of furniture. The hangings were of red velvet, and the chair coverings were of tapestry with this Etruscan background, the effect being bold and vigorous.

There is in Paris a delightful little library I happen to know of, that belongs to this period. The walls are paneled in mahogany, and the door trim and other woodwork are also carried out in this wood. The doors are divided into elongated octagonal panels with circular panels below. The elongated panels are decorated with a set of scenes illustrating the story of Paris and Helen of Troy, done in the manner of David. Amusing birds with chalices of wine, and caskets containing jewels adorn the circular panels below. The trim of the doors is decorated with a delicate tracery, Pompeian in feeling, from which place much of the inspiration of this period was derived. The pilasters in this room are of the most delicate proportions; in fact the entire room is one of the finest examples of architecture of this period to be found in Paris.

Of course many of the older houses were left in their original styles of architecture, so although their backgrounds remained the same, their rooms were refurnished in the styles of these later periods. In planning the decorations of homes today, no special style of French architecture need be adhered to. A simply paneled room will make an excellent background to start with, or the walls may be covered with a reproduction of one of the Louis XV flock papers, or again as in a bedroom the walls may be hung in chintz or papered with one of the many interesting *toile* papers that are copied today from designs of this interesting fabric. When walls are thus papered, it is well to use for the chair coverings and draperies fabrics showing the same designs, bound with the narrow, colored tape used at the time.

The introduction of the use of flowers and growing plants was begun at this time, through the realization by Percier and Fontaine of the importance of their beauty and decorative quality. This led to the creation of charming tables made of tin and sheet iron with three and four "galleries" to hold pots and plants, and fountain basins containing fish and topped with statuettes of the classic deities. The design of desks was changed at this period. The earlier desks were mostly of the table variety, but later on, after the Louis XVI style had been introduced, we find the vertical *escritoire* which later developed into the *bureau escritoire*, or secretary, with a small compartment above divided with doors and panes of glass. Harps and spinets made of choice woods were also designed at this time. Some were decorated with pastoral scenes, but most of the later instruments were of ebony, mahogany, or else of gilt.

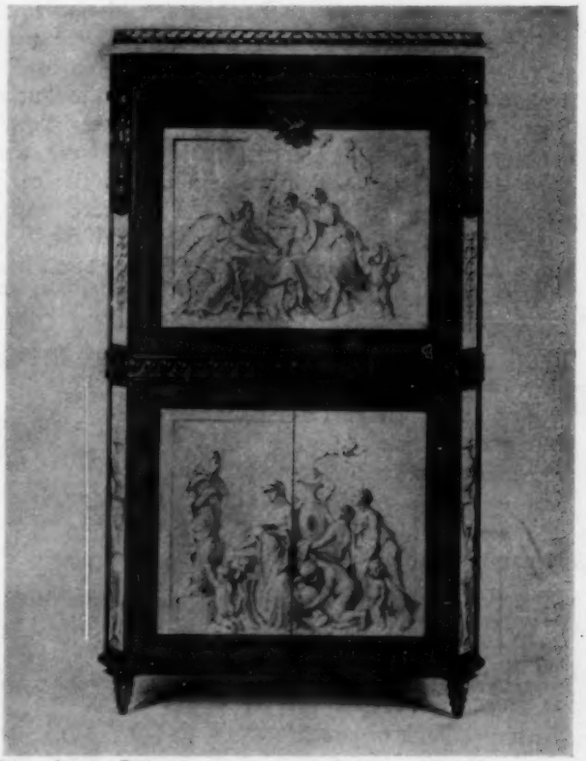


Photo. Jacques Bodart

During the Louis XVI period design received much inspiration from the classic, due to the influence of Monsieur de Marigny, the brother of Mme. La Marquise de Pompadour, who went to Italy and visited Pompeii and Herculaneum. In this style, known as *a la Grecque*, is this *secretaire* from the Dutuet collection which is now in the Petit Palais, so that others may enjoy its beauty, grace and fine feeling for design